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CRPL-F 231 PART A

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PART A
IONOSPHERIC DATA

ISSUED
NOVEMBER 1963

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

CRPL-F 231
PART A

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
22 Nov. 1963

IONOSPHERIC DATA

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IONOSPHERIC DATA

The CRPL-F series bulletins are issued as part of the responsibility of the Central Radio Propagation Laboratory for the exchange and distribution of ionospheric and related geophysical data. Part A, "Ionospheric Data," and Part B, "Solar-Geophysical Data," of the CRPL-F series present a variety of data in convenient form for use in research in radio propagation and the ionosphere and in other geophysical problems.

The current form of the tables of ionospheric data provides the monthly medians and, in addition, the number of values entering into the median determination (count) for all ionospheric characteristics listed. Also, when available, the upper and lower quartile values indicated by UQ and LQ in the tables, are listed for foF2, h'F2, h'F, and M(3000)F2. Quartile values are not listed for the other characteristics because of space limitations. The tables are prepared by IBM machine methods.

Beginning with CRPL-F221, Part A, "Ionospheric Data," the hourly median values for the graphs of critical frequencies and M(3000)F2 were plotted by machine methods instead of manually, as in earlier issues. Graphs of critical frequencies and M(3000)F2 will continue to appear. Graphs of percentage of time of occurrence for fEs and virtual heights of the regular ionospheric layers are no longer included. Data on percentage of time of occurrence of fEs above 3, 5, and 7 Mc are available from the CRPL and the IGY World Data Center for Airglow and Ionosphere.

For many years, the tables of ionospheric data appearing in the F series, Part A, listed values of medians recomputed at CRPL. While this practice enforced a certain uniformity, it was subject to some valid criticism for tampering with the original data. The tables and graphs now show the ionospheric data as they are provided by the originating laboratory. Responsibility for the accuracy and reliability of the data rests entirely with the originator.

Medians of data for the U.S. stations are computed in accordance with the recommendations of the World-Wide Soundings Committee. Data will appear in the F series, Part A, only when the complete daily-hourly tabulations have been received by the CRPL or the IGY World Data Center A for Airglow and Ionosphere.

Information on symbols, terminology, and conventions may be found in the "URSI Handbook of Ionogram Interpretation and Reduction, of the World-Wide Soundings Committee," edited by W. R. Piggott and K. Rawer (Elsevier, 1961), which supersedes previous documents. A list of symbols is available from CRPL on request.

The following table contains the latest available information on smoothed observed Zurich sunspot numbers, beginning with the minimum of April 1954. Final numbers are listed through June 1962, the succeeding values being based on provisional data.

Smoothed Observed Zurich Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	10	12
1955	14	16	19	23	29	35	40	46	55	64	73	81
1956	89	98	109	119	127	137	146	150	151	156	160	164
1957	170	172	174	181	186	188	191	194	197	200	201	200
1958	199	201	201	197	191	187	185	185	184	182	181	180
1959	179	177	174	169	165	161	156	151	146	141	137	132
1960	129	125	122	120	117	114	109	102	98	93	88	84
1961	80	75	69	64	60	56	53	52	52	51	50	49
1962	45	42	40	39	39	38	36	34	32	31	30	30
1963	29	30	30	29								

Units of Ionospheric Data Tables

foF2, foEs - - - Tenth of a megacycle
 foF1, foE - - - Hundredths of a megacycle
 h'F2, h'F, h'E - Kilometers
 (M3000)F2 - - - Hundredths

NOTE: Occasionally, when the median falls between two of the observed values, the median is carried an extra decimal place beyond these units. Those cases are easily identifiable by the extra digit appearing to the right of the number, in a column usually left blank.

MED - Median
 CNT - Count
 UQ - Upper Quartile
 LQ - Lower Quartile

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

THE IONOSPHERIC DATA GIVEN IN TABLES 1 TO 100 AND FIGURES 1 TO 100 WERE ASSEMBLED BY THE CENTRAL RADIO PROPAGATION LABORATORY FOR ANALYSIS, CORRELATION AND DISTRIBUTION. THE FOLLOWING ARE THE SOURCES OF THE DATA IN THIS ISSUE.

COMMONWEALTH OF AUSTRALIA, IONOSPHERIC PREDICTION SERVICE OF THE COMMONWEALTH OBSERVATORY.

HOBART, TASMANIA

TOWNSVILLE, AUSTRALIA

DANISH NATIONAL COMMITTEE OF URSI.

GODHAVN, GREENLAND

NARSSARSSUAQ, GREENLAND

ICELANDIC POST AND TELEGRAPH ADMINISTRATION.

REYKJAVIK, ICELAND

INDIAN COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH,
RADIO RESEARCH COMMITTEE, NEW DELHI, INDIA.

AHMEDABAD, INDIA (PHYSICAL RESEARCH LABORATORY)

KODAIKANAL, INDIA (INDIA METEOROLOGICAL DEPARTMENT)

THE ROYAL NETHERLANDS METEOROLOGICAL INSTITUTE.

PARAMARIBO, SURINAM

MANILA OBSERVATORY, PHILIPPINES.

BAGUIO, LUZON

RESEARCH INSTITUTE OF NATIONAL DEFENCE, STOCKHOLM, SWEDEN.

KIRUNA, SWEDEN

UPPSALA, SWEDEN

UNITED STATES ARMY SIGNAL CORPS., UNITED STATES OF AMERICA.

ADAK, ALASKA

FT. MONMOUTH, NEW JERSEY

GRAND BAHAMA I.

OKINAWA I.

THULE, GREENLAND

WHITE SANDS, NEW MEXICO

NATIONAL BUREAU OF STANDARDS, UNITED STATES OF AMERICA.
(CENTRAL RADIO PROPAGATION LABORATORY).

BARROW, ALASKA

BYRD STATION, ANTARCTICA

COLLEGE (FAIRBANKS), ALASKA (GEOPHY INST OF UNIV OF ALASKA)

HUANCAYO, PERU (INSTITUTO GEOFISICO DEL PERU)

MAUI, HAWAII

POLE STATION, ANTARCTICA

TALAR, PERU (INSTITUTO GEOFISICO DEL PERU)

WASHINGTON, D.C.

ERRATUM

CRPL-F229, P. 5, TABLE 17: THE CORRECT VALUES OF HEIGHTS FOR
WHITE SANDS, NOVEMBER 1961, ARE 10 PERCENT LOWER THAN WERE REPORTED.

TABLES OF IONOSPHERIC DATA

August 1963 - April 19

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TABLE 2

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TABLE

1

BAGUIO, LUZON												(16°44'N, 120°56'E)														
TIME 1200 ^a												TIME 1644 ^a														
HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
F2	MED	U	7	61	53	45	35	32	52	65	74	80	89	91	99	102	104	107	108	105	100	97	66	56		
	CNT	U	50	42	34	26	18	11	5	2	7	24	32	40	47	55	62	64	66	68	70	72	75	78	80	
	UQ	UQ	55	52	49	46	33	28	20	15	7	23	30	37	44	51	58	65	67	69	71	74	76	78	80	
	LO	LO	55	53	48	46	33	28	20	15	7	23	30	37	44	51	58	65	67	69	71	74	76	78	80	
F2	MED	U	20	18	16	14	11	9	7	5	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	
	CNT	U	20	19	17	15	13	11	9	7	5	3	2	1	0	0	0	0	0	0	0	0	0	0	0	
	UQ	UQ	20	19	17	15	13	11	9	7	5	3	2	1	0	0	0	0	0	0	0	0	0	0	0	
F	MED	U	320	280	250	220	200	195	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	
	CNT	U	320	280	250	220	200	195	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	
	UQ	UQ	320	280	250	220	200	195	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	
F	MED	U	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0	0	
	CNT	U	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0	0	
	UQ	UQ	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0	0	
F2	MED	U	270	300	335	360	390	400	405	380	350	320	300	320	320	320	320	320	320	320	320	320	320	320	320	320
	CNT	U	270	300	335	360	390	400	405	380	350	320	300	320	320	320	320	320	320	320	320	320	320	320	320	320
	UQ	UQ	270	300	335	360	390	400	405	380	350	320	300	320	320	320	320	320	320	320	320	320	320	320	320	320
F	MED	U	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355	360	365	370
	CNT	U	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355	360	365	370
	UQ	UQ	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355	360	365	370
F	MED	U	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355
	CNT	U	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355
	UQ	UQ	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355
F	MED	U	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345
	CNT	U	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345
	UQ	UQ	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345
F	MED	U	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335
	CNT	U	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335
	UQ	UQ	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335
F	MED	U	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325
	CNT	U	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325
	UQ	UQ	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325
F	MED	U	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315
	CNT	U	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315
	UQ	UQ	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315
F	MED	U	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305
	CNT	U	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305
	UQ	UQ	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305
F	MED	U	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295
	CNT	U	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295
	UQ	UQ	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295
F	MED	U	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285
	CNT	U	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285
	UQ	UQ	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285
F	MED	U	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275
	CNT	U	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275
	UQ	UQ	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275
F	MED	U	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265
	CNT	U	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265
	UQ	UQ	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265
F	MED	U	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255
	CNT	U	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255
	UQ	UQ	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255
F	MED	U	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245
	CNT	U	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245
	UQ	UQ	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215						

TABLE 5

TABLE 6

KODAIKANAL, INDIA (115°47'N, 77°54'E)												TIME 7540E BAGUIO, LUZON (116°48'N, 120°45'E)													
TIME 7540E												TIME 1204E													
HOUR	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
16 F2	MED	5.5	4.2	4.6	4.2	2.0	1.7	4.8	5.0	8.1	8.0	7.4	7.6	7.8	9.0	8.4	9.8	9.0	9.1	8.0	9.0	9.1	10.3	9.5	
	MED	5.2	2.2	2.3	2.3	2.2	2.2	2.6	2.6	3.0	3.0	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.0	3.0	3.0	2.5	
	UQ																								
	LQ																								
16 F2	MED																								
	MED																								
	UQ																								
	LQ																								
16 F	MED	3.0	3.0	2.8	2.0	2.4	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
	MED	2.9	2.8	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	
	UQ																								
	LQ																								
16 F2	MED																								
	MED																								
	UQ																								
	LQ																								
16 E	MED	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
	MED	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	
	UQ																								
	LQ																								
16 F2	MED																								
	MED																								
	UQ																								
	LQ																								
16 F	MED	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
	MED	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	
	UQ																								
	LQ																								
16 F2	MED																								
	MED																								
	UQ																								
	LQ																								
16 E	MED	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
	MED	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	
	UQ																								
	LQ																								
16 F	MED	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
	MED	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	
	UQ																								
	LQ																								
16 F2	MED																								
	MED																								
	UQ																								
	LQ																								
16 E	MED	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
	MED	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	
	UQ																								
	LQ																								
16 F	MED	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
	MED	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	
	UQ																								
	LQ																								
16 F2	MED																								
	MED																								
	UQ																								
	LQ																								
16 E	MED	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
	MED	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	
	UQ																								
	LQ																								
16 F	MED	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
	MED	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	
	UQ																								
	LQ																								
16 F2	MED																								
	MED																								
	UQ																								
	LQ																								
16 E	MED	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
	MED	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	
	UQ																								
	LQ																								
16 F	MED	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
	MED	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	
	UQ																								
	LQ																								
16 F2	MED																								
	MED																								
	UQ																								
	LQ																								
16 E	MED	3.0	3.0	3.0	3.0	3.0																			

915

TABLE 10

1.0 MC TO 25.0 MC IN 27 SECONDS.

1

PRACTICAL HANDBOOK OF
ELECTRICAL ENGINEERING

TABLE 12

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TABLE 20

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SWEETPEA 1.0.6 MC 18 2008 ME IN 15 SECONDS

MUDÉJAR, 1962

43 3E20M138

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SCMPEP 110 N 140 M 140 L 160 S 160 E 160 N 160 S 160 E

OCTOPUS 1962

TABLE 26

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CYTOBEP, 1962

SEPTEMBER 1962

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TABLE 44

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JULY 9 1962

SWEEP 160 MC 700 μ m \times 100 μ m \times 100 μ m

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INTRODUCTION

	α	β	γ	δ	ϵ	ζ	η	θ	φ	ψ	χ	ψ'	χ'	φ'	θ'	η'	ζ'	ϵ'	δ'	γ'	β'	α'	
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CONFIDENTIAL - 7 OF 20 PAGES

JUN 4 1962

TABLE 644

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JUN 4 1961

WIFEP 1.0.6 WIF TO 20.0 MC IN 15 SFENDS

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TABLE 56

MECEP 100 MC TB 2008 MR 144 146 - 147

JUN 9 1962

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SWEET 1.0 MC 70 25.0 HC TN 27 DECIMALS

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June • 1962

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h F2	MED C1 C2 C3																																	
h F	MED C1 C2 C3																																	
M130001F2	MED C1 C2 C3																																	
fo E	MED C1 C2 C3																																	
fo E	MED C1 C2 C3																																	
h E	MED C1 C2 C3																																	
fo E _s	MED C1 C2 C3																																	

100% * 10⁻²

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fo F2	MED C1 C2 C3																																	
h F2	MED C1 C2 C3																																	
h F	MED C1 C2 C3																																	
M130001F2	MED C1 C2 C3																																	
fo E	MED C1 C2 C3																																	
fo E	MED C1 C2 C3																																	
h E	MED C1 C2 C3																																	
fo E _s	MED C1 C2 C3																																	

	00	01	02	03	04	05	06	07	08	09	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
fo E _c	MED C1 C2 C3																																	
h E _c	MED C1 C2 C3																																	
h F	MED C1 C2 C3																																	
M130001F2	MED C1 C2 C3																																	
fo E	MED C1 C2 C3																																	
fo E	MED C1 C2 C3																																	
h E	MED C1 C2 C3																																	
fo E _s	MED C1 C2 C3																																	

100% * 10⁻²100% * 10⁻²

73

74

APLF 76

TABLE 76

9

TABLE 89

TABLE 90

EP 1.0 - MC - C 2543 M - 00 12/27 F - OMRCS

PAGE 2

OBER + 1967

94

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• 1961

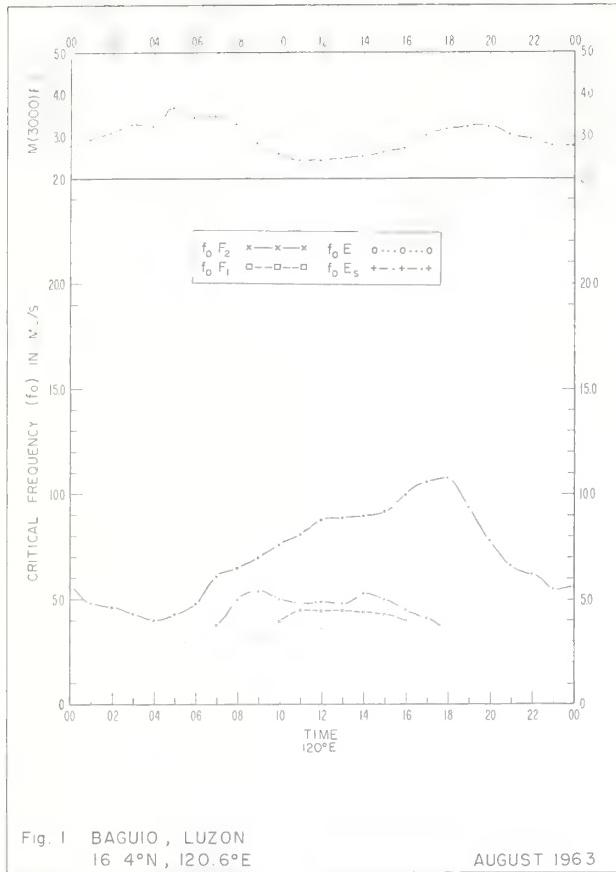
HOUR	AVION STATISTICS				
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H F	MED CMT UQ LQ	" " " "	" " " "	" " " "	" " " "
MH 30000 F2	MED CMT UQ LQ	" " " "	" " " "	" " " "	" " " "
I F	MED CMT UQ LQ	" " " "	" " " "	" " " "	" " " "
I E	MED CMT UQ LQ	" " " "	" " " "	" " " "	" " " "
N E	MED CMT UQ LQ	" " " "	" " " "	" " " "	" " " "
NE E	MED CMT UQ LQ	" " " "	" " " "	" " " "	" " " "

TABLE 37

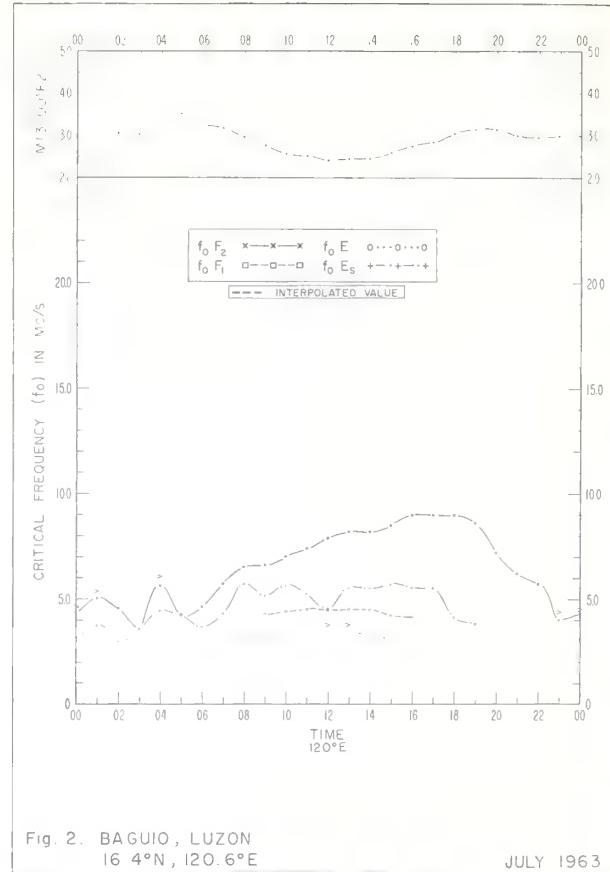
TABLE OA

HJD 2012

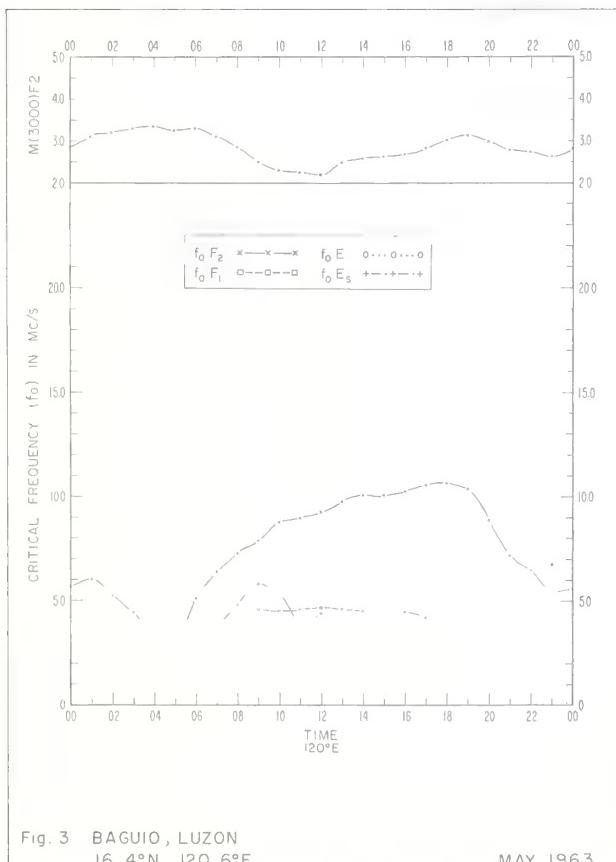
D. L., 1961

Fig. 1 BAGUIO, LUZON
16.4°N, 120.6°E

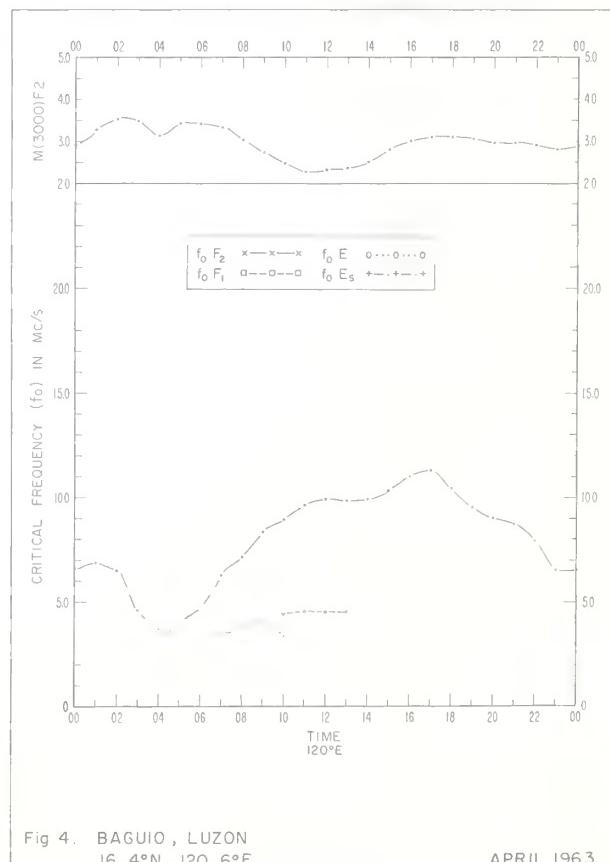
AUGUST 1963

Fig. 2 BAGUIO, LUZON
16.4°N, 120.6°E

JULY 1963

Fig. 3 BAGUIO, LUZON
16.4°N, 120.6°E

MAY 1963

Fig. 4 BAGUIO, LUZON
16.4°N, 120.6°E

APRIL 1963

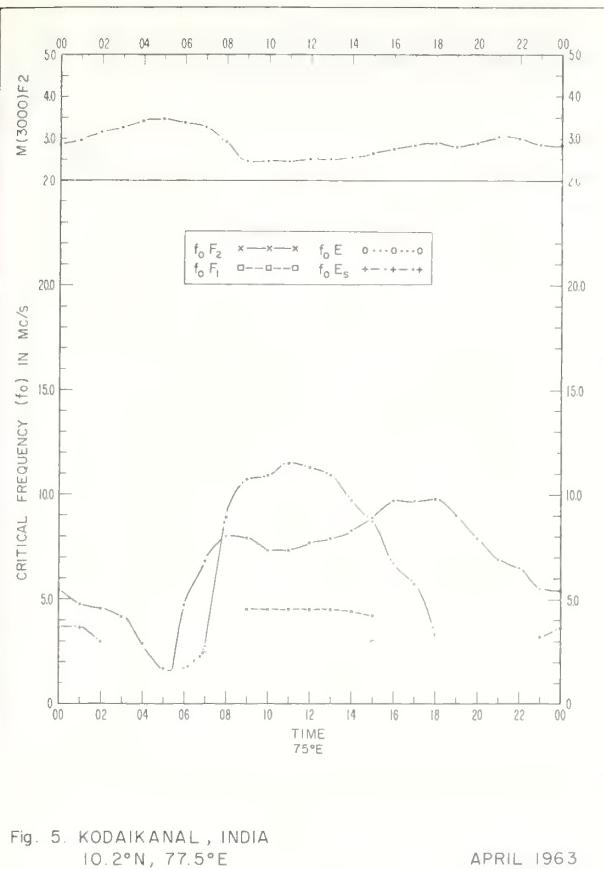


Fig. 5. KODAIKANAL, INDIA
10.2°N, 77.5°E

APRIL 1963

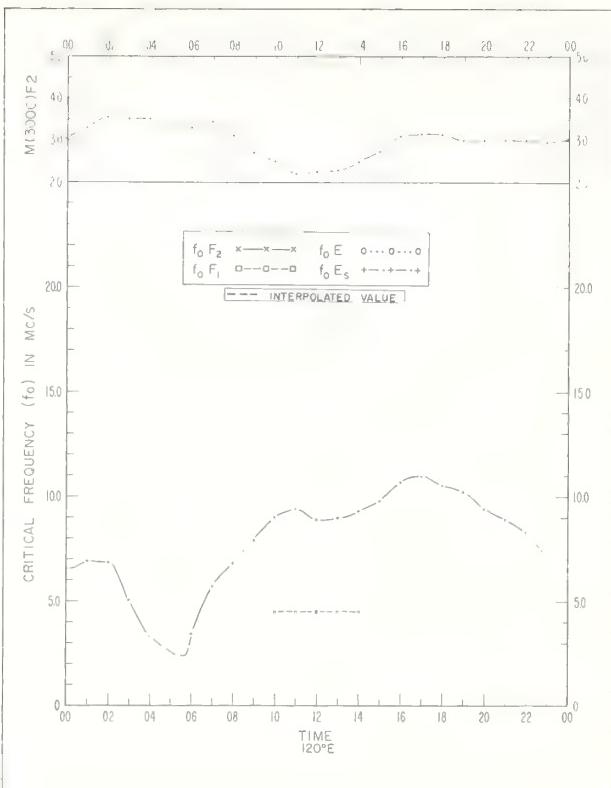


Fig. 6. BAGUIO, LUZON
16.4°N, 120.6°E

MARCH 1963

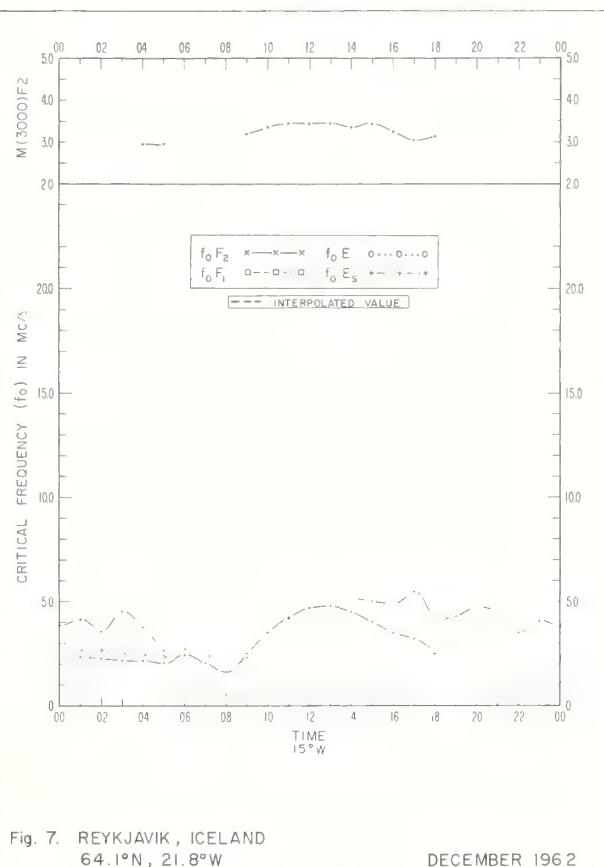


Fig. 7. REYKJAVIK, ICELAND
64.1°N, 21.8°W

DECEMBER 1962

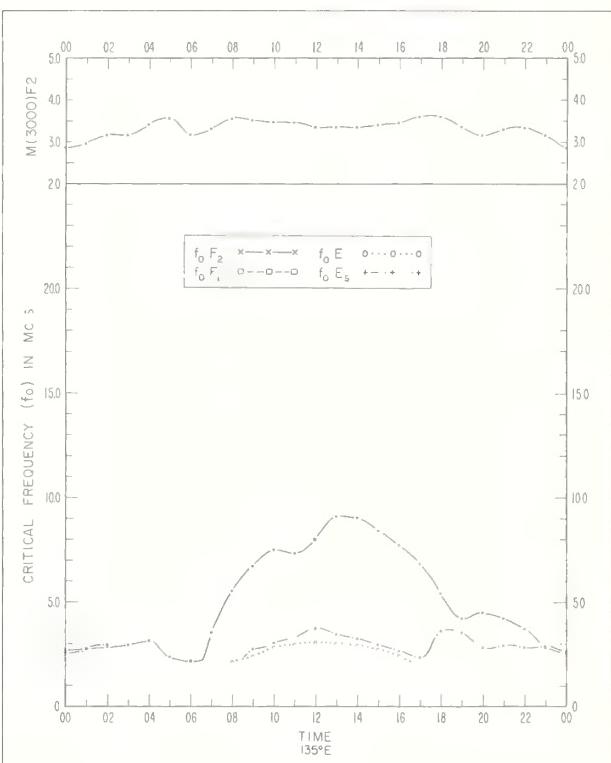


Fig. 8. OKINAWA I.
26.3°N, 127.8°E

DECEMBER 1962

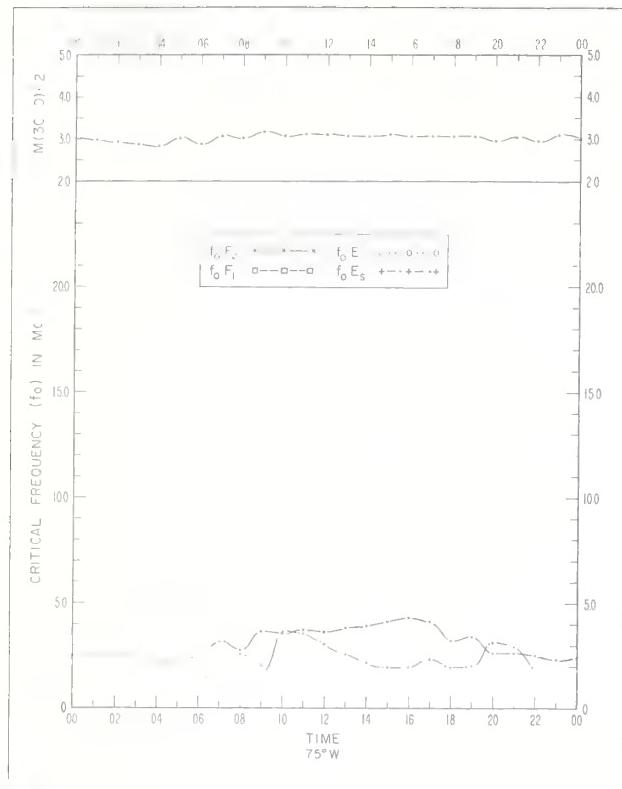


Fig. 9 THULE , GREENLAND
76° 0'N, 68° 0'W

NOVEMBER 1962

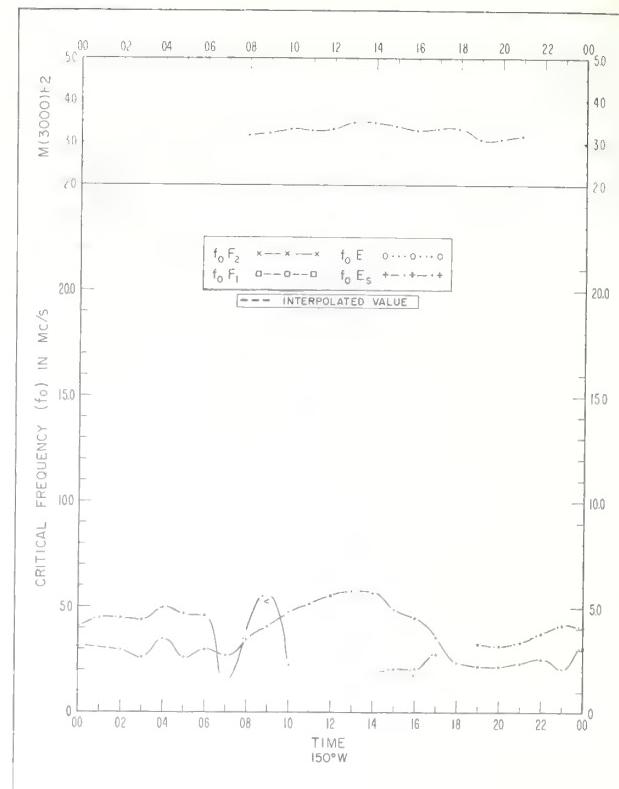


Fig. 10. COLLEGE (FAIRBANKS), ALASKA
64.9°N, 147.8°W

NOVEMBER 1962

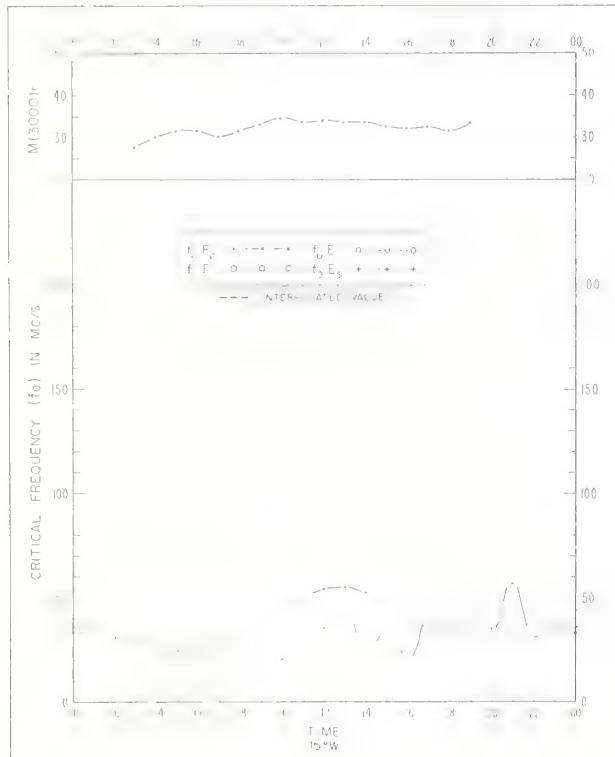


Fig. 11. REYKJAVIK , ICELAND
64.1°N, 21.8°W

NOVEMBER 1962

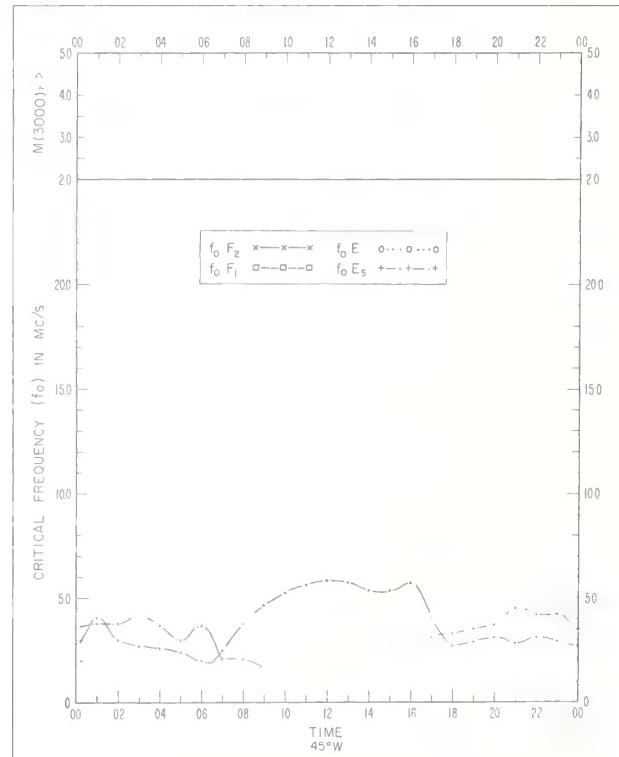
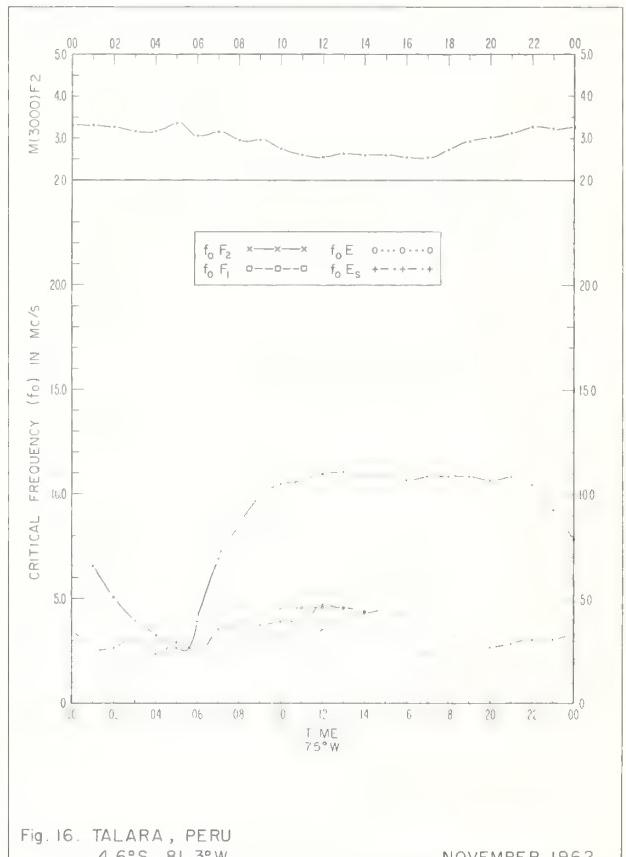
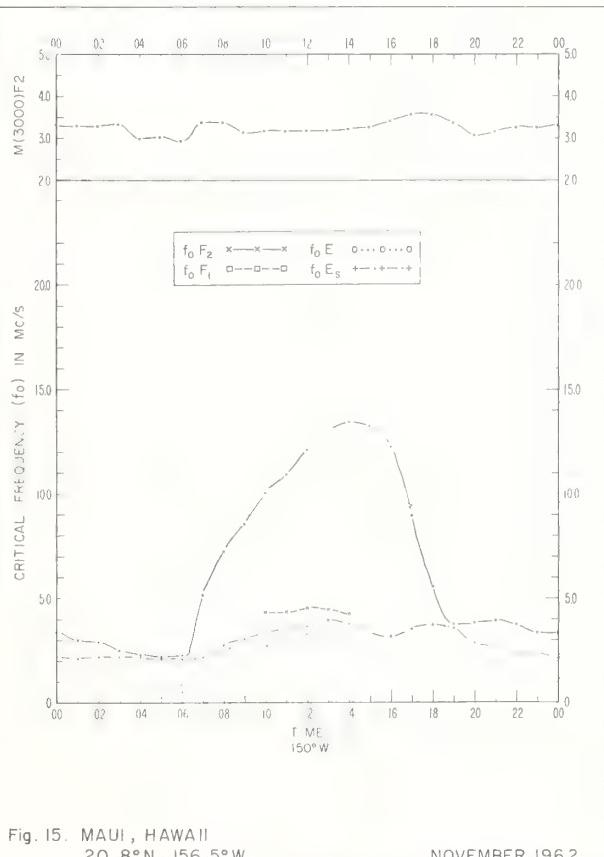
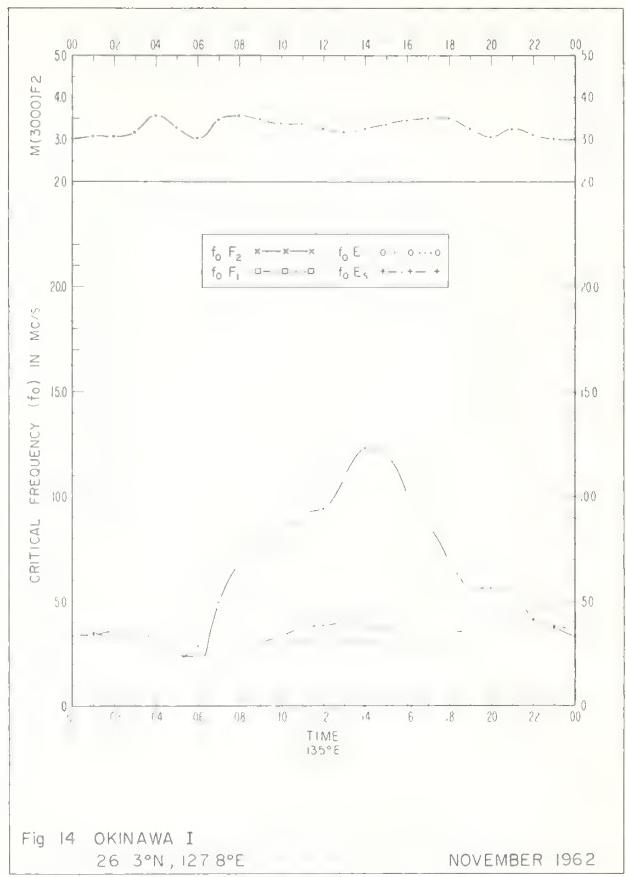
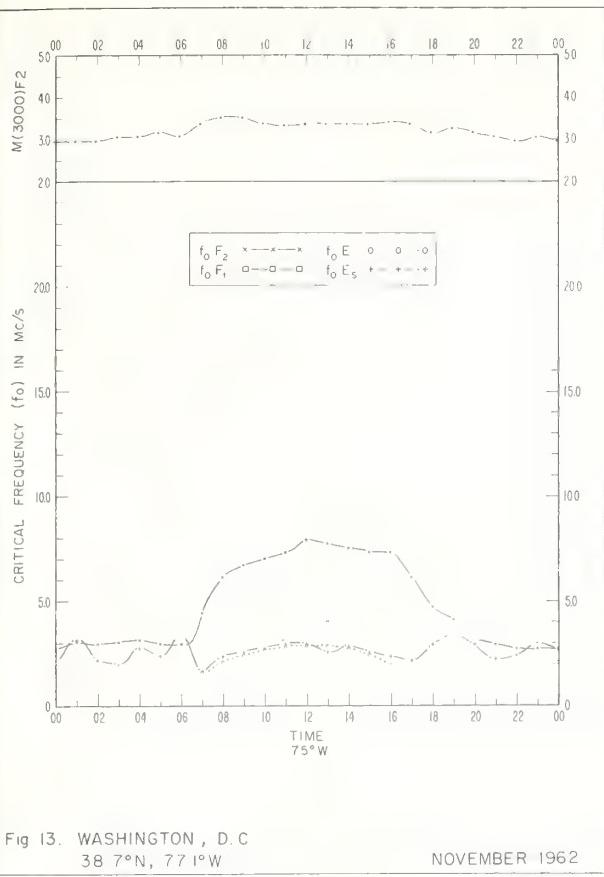
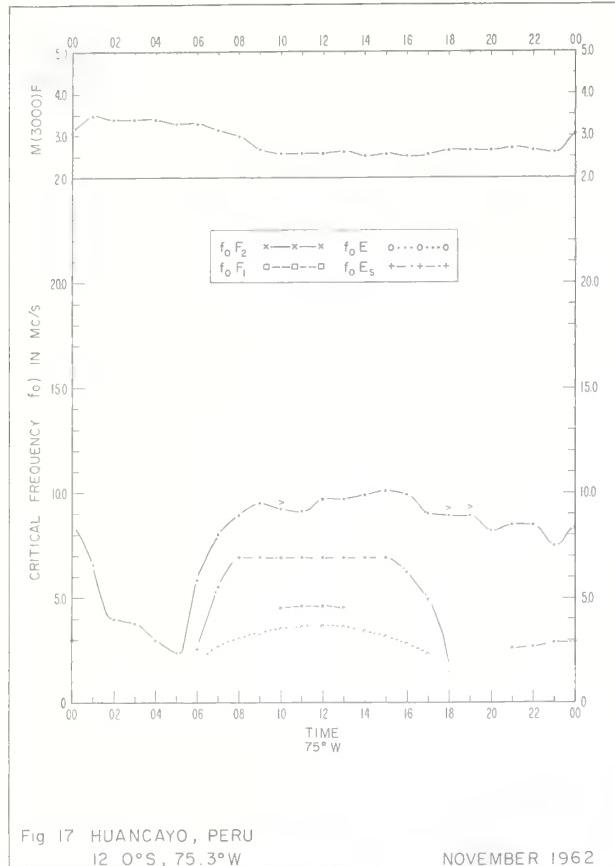


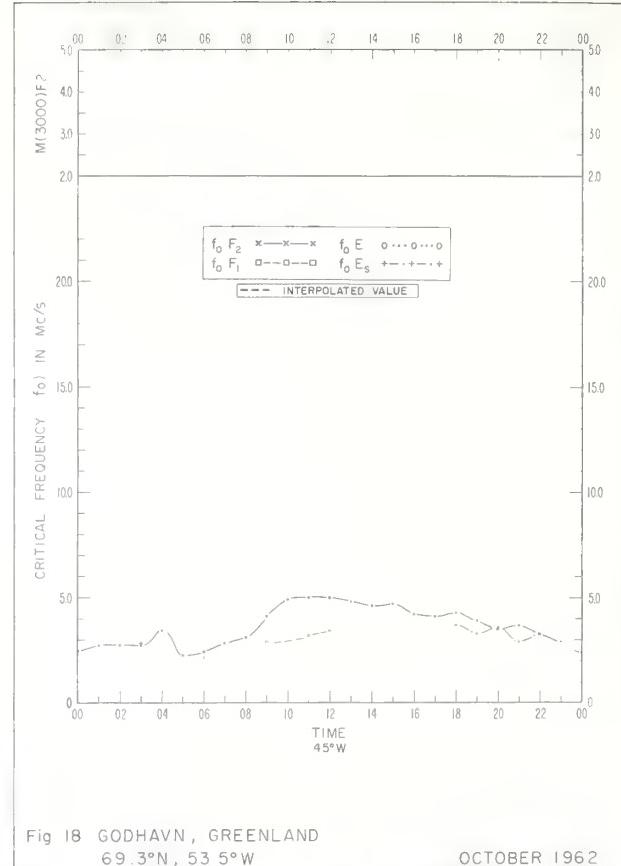
Fig. 12. NARSSARSSUAQ , GREENLAND
61.2°N, 45.4°W

NOVEMBER 1962

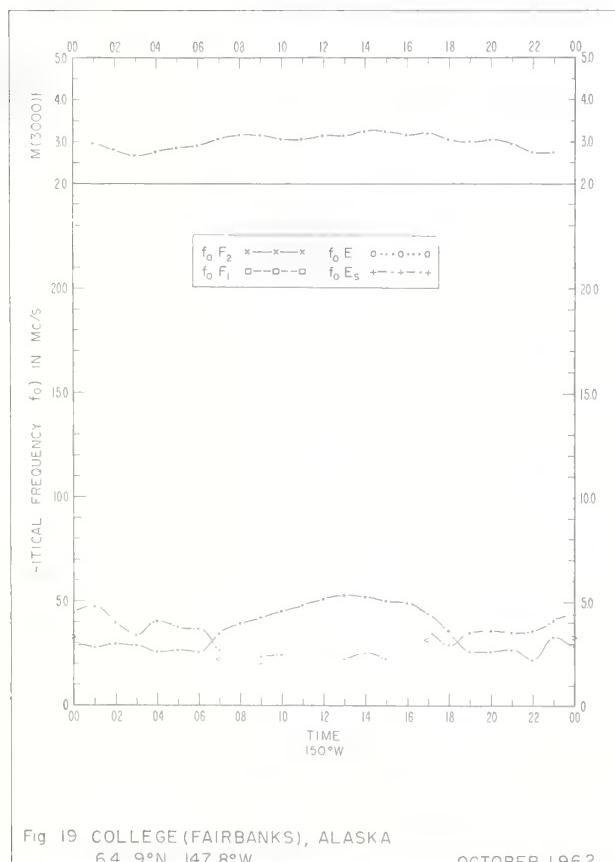


Fig. 17 HUANCAYO, PERU
12°S, 75.3°W

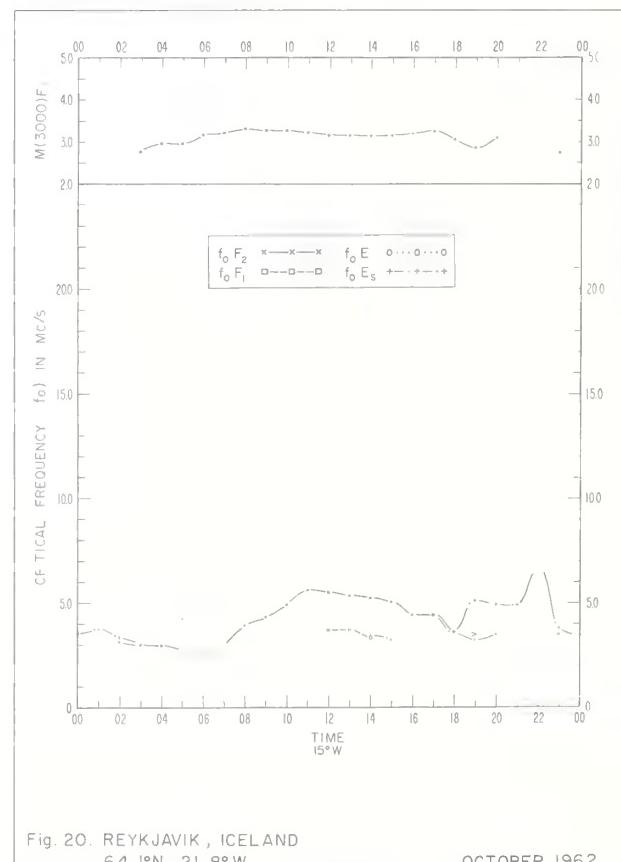
NOVEMBER 1962

Fig. 18 GODHAVN, GREENLAND
69.3°N, 53.5°W

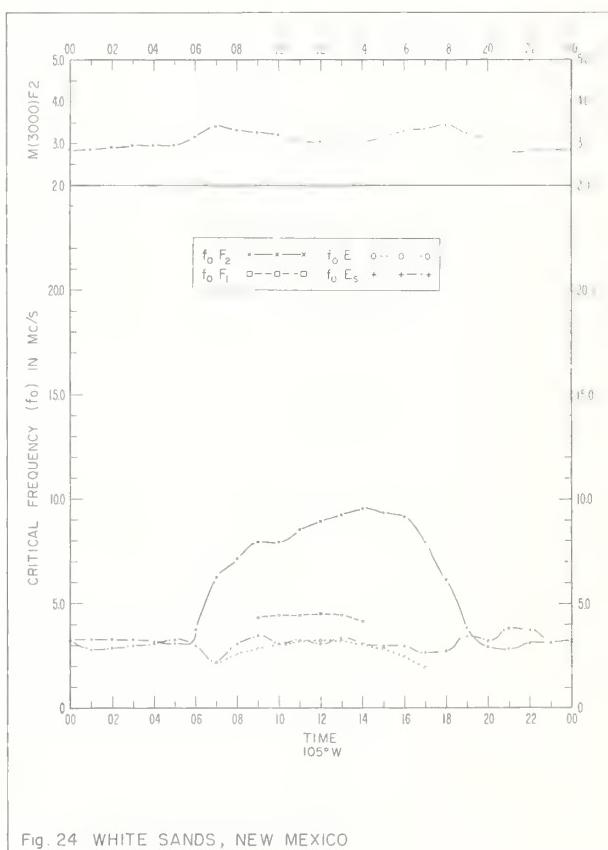
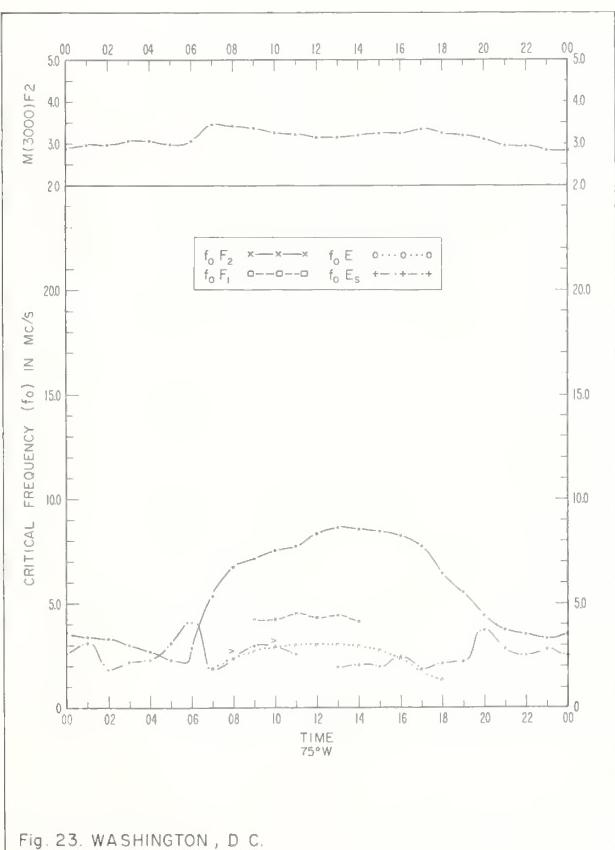
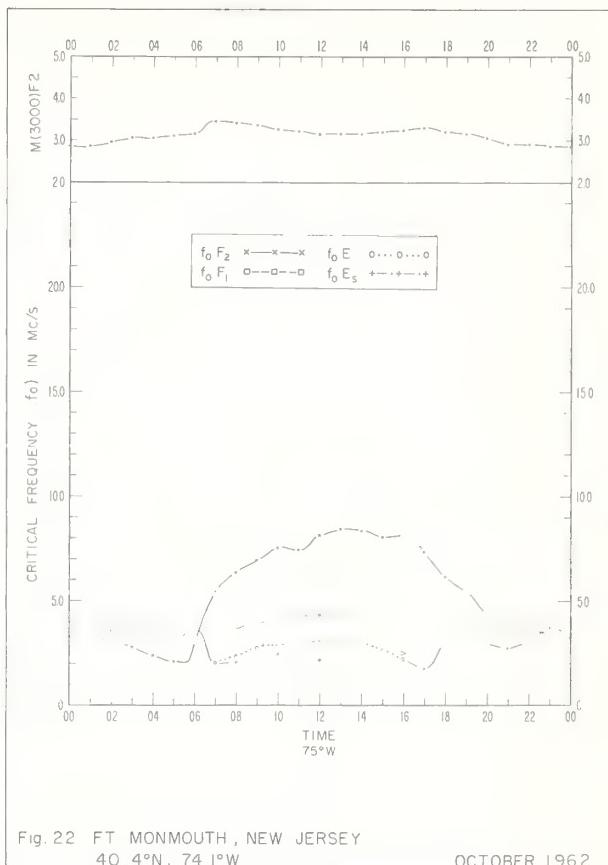
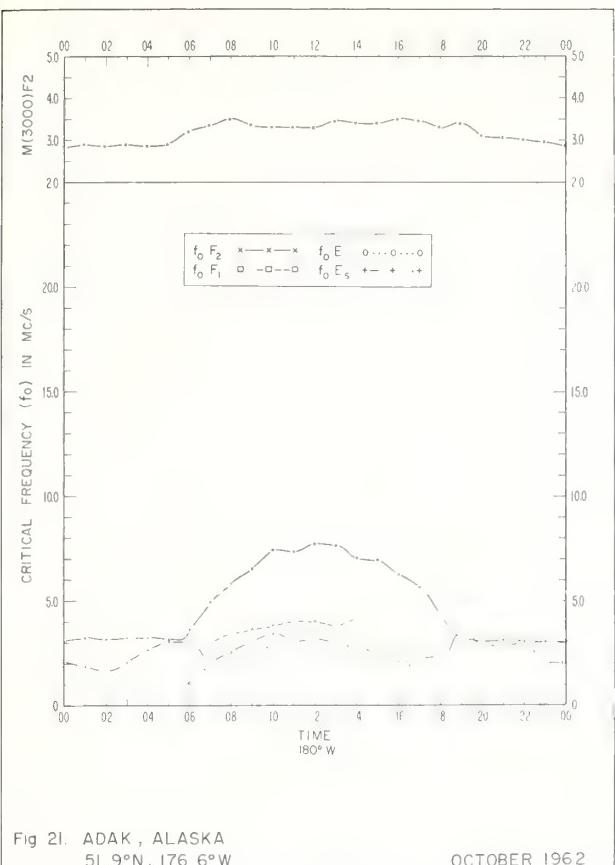
OCTOBER 1962

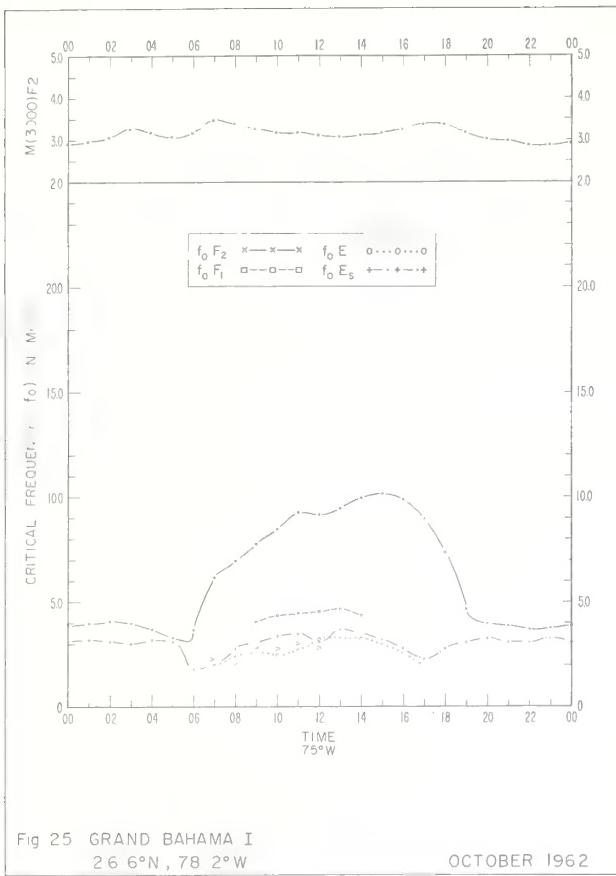
Fig. 19 COLLEGE (FAIRBANKS), ALASKA
64.9°N, 147.8°W

OCTOBER 1962

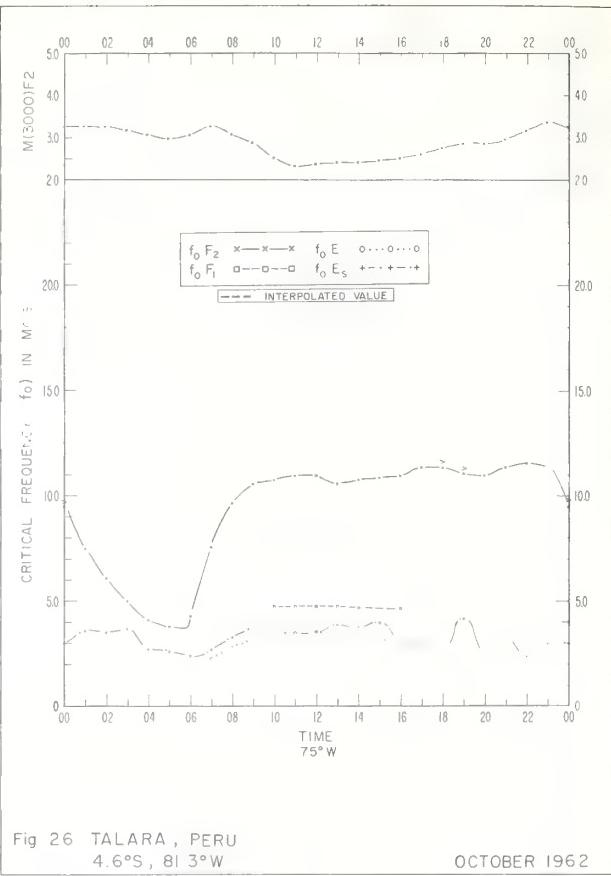
Fig. 20. REYKJAVIK, ICELAND
64.1°N, 21.8°W

OCTOBER 1962

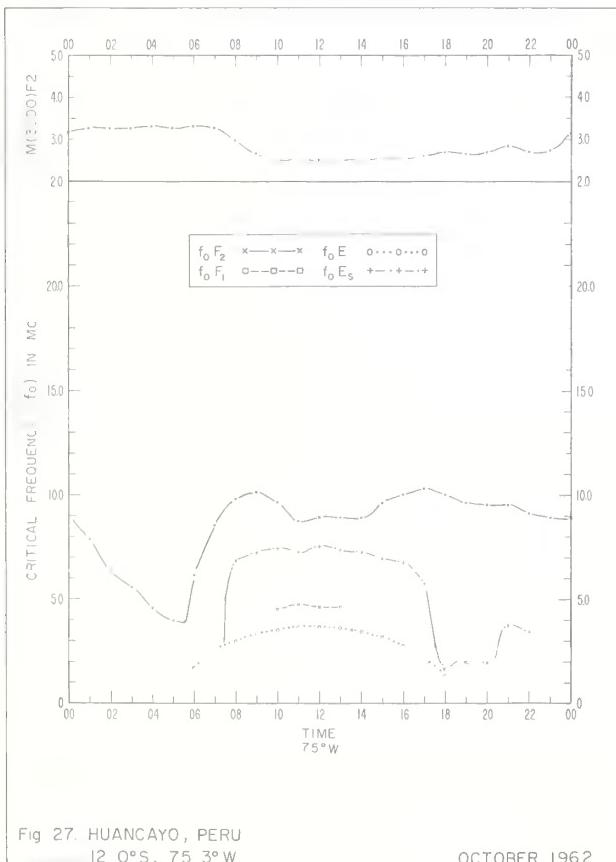


Fig 25 GRAND BAHAMA I
26.6°N, 78.2°W

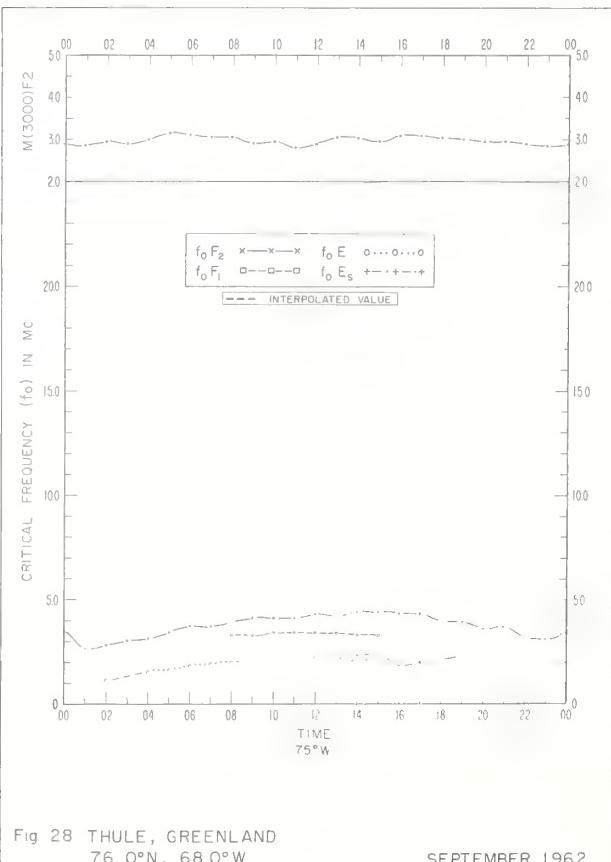
OCTOBER 1962

Fig 26 TALARA, PERU
4.6°S, 81.3°W

OCTOBER 1962

Fig 27. HUANCAYO, PERU
12.0°S, 75.3°W

OCTOBER 1962

Fig 28 THULE, GREENLAND
76.0°N, 68.0°W

SEPTEMBER 1962

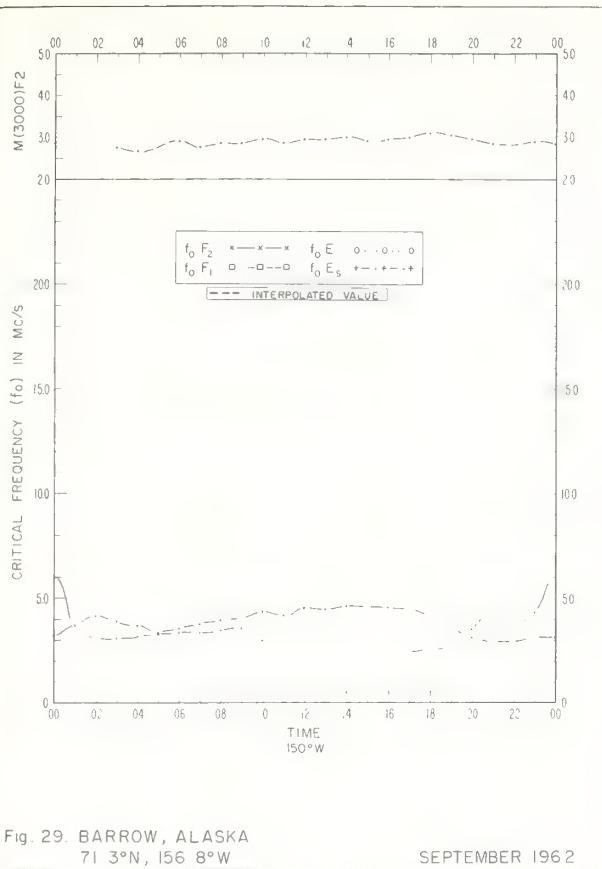


Fig. 29. BARROW, ALASKA
71°3'N, 156°8'W
SEPTEMBER 1962

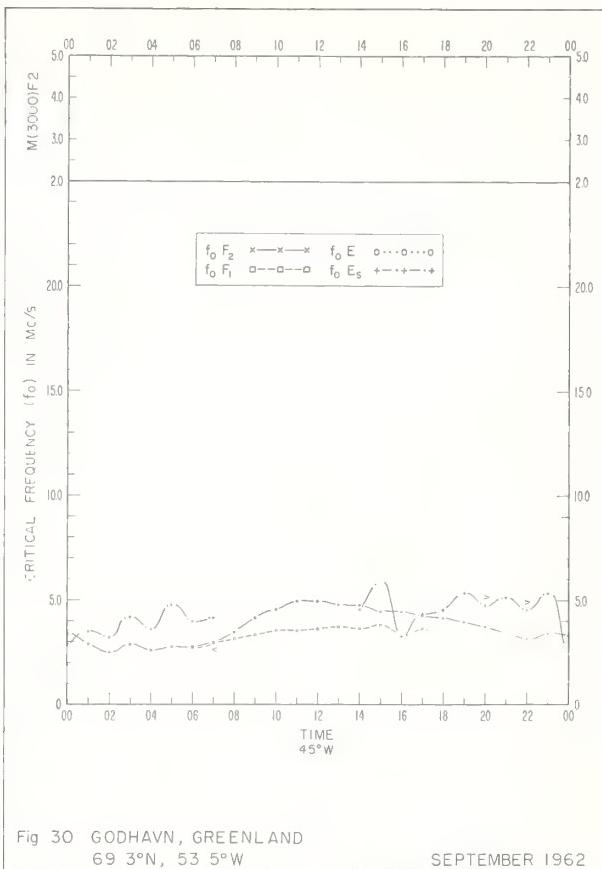


Fig. 30 GODHAVN, GREENLAND
69°3'N, 53°5'W
SEPTEMBER 1962

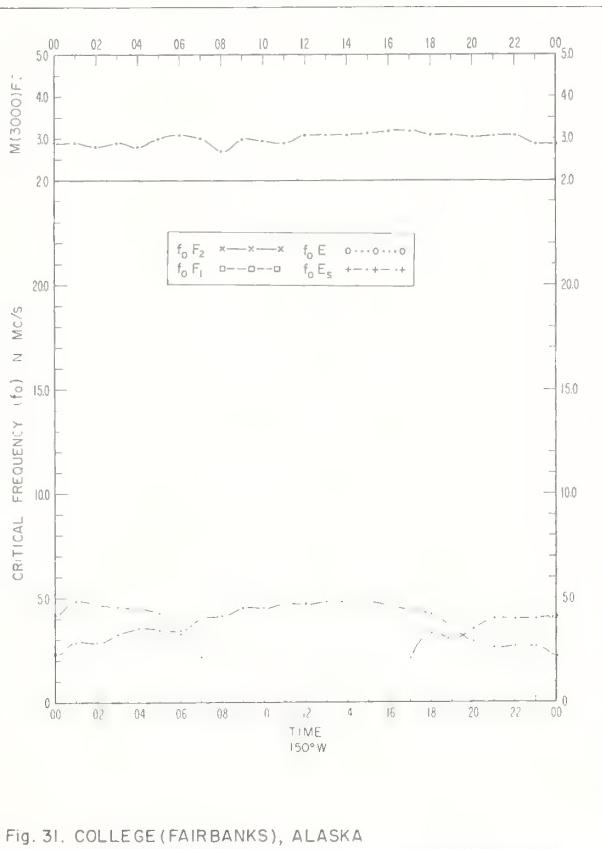


Fig. 31. COLLEGE (FAIRBANKS), ALASKA
64.9°N, 147.8°W
SEPTEMBER 1962

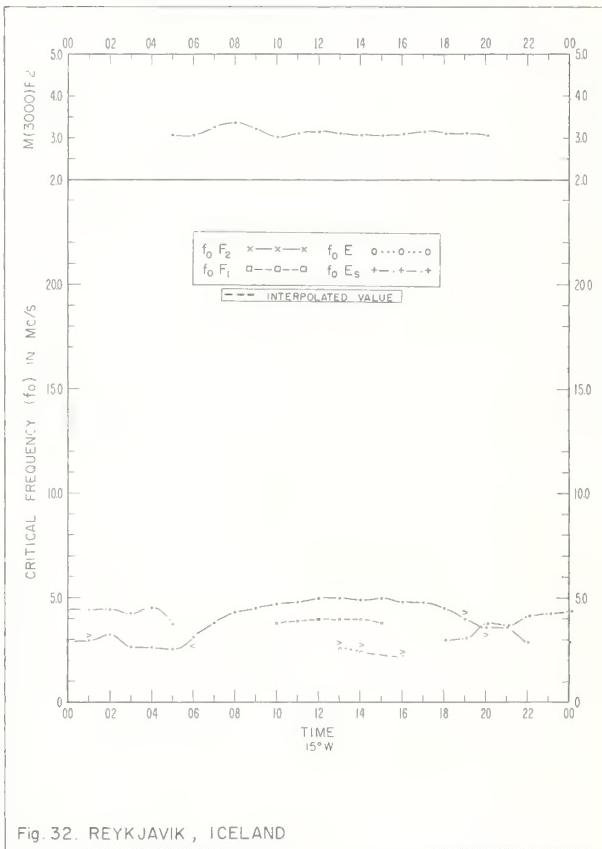
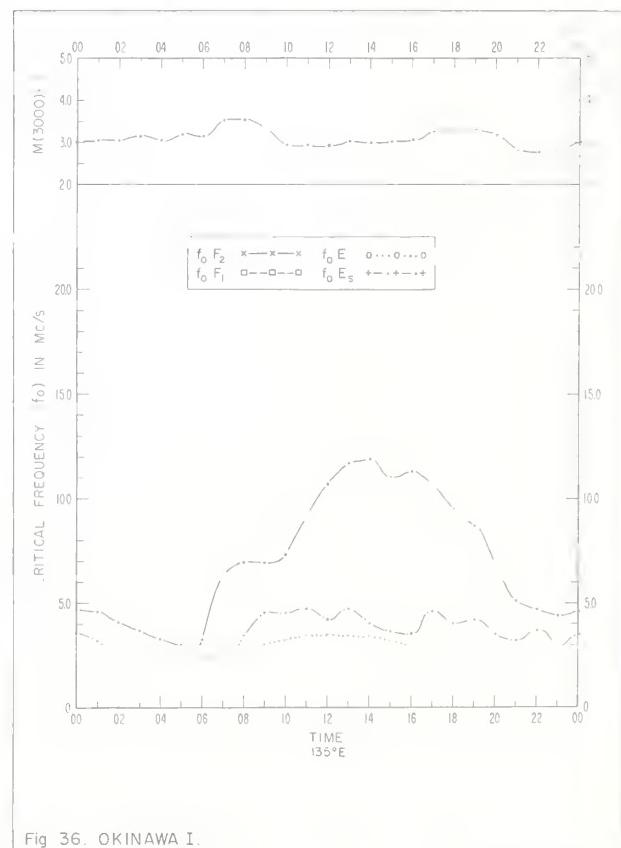
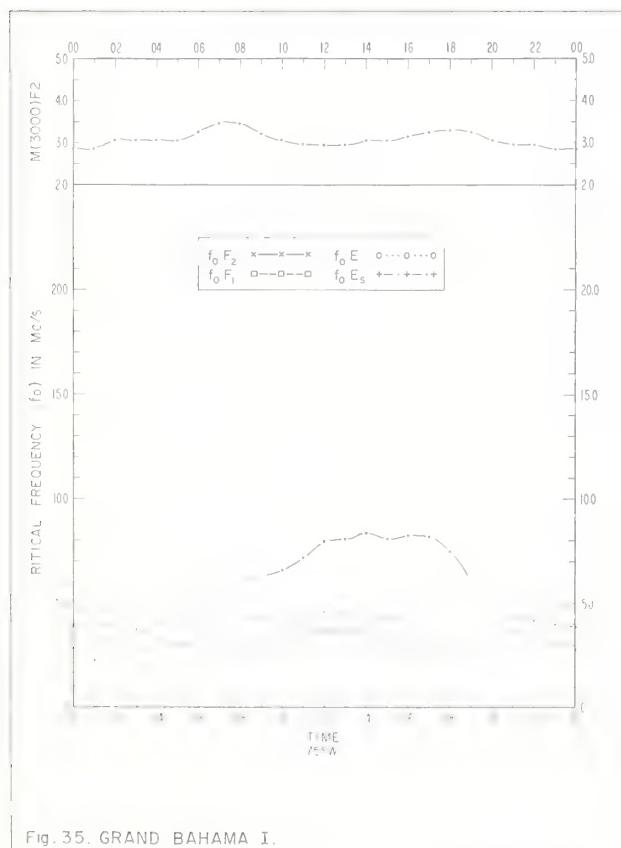
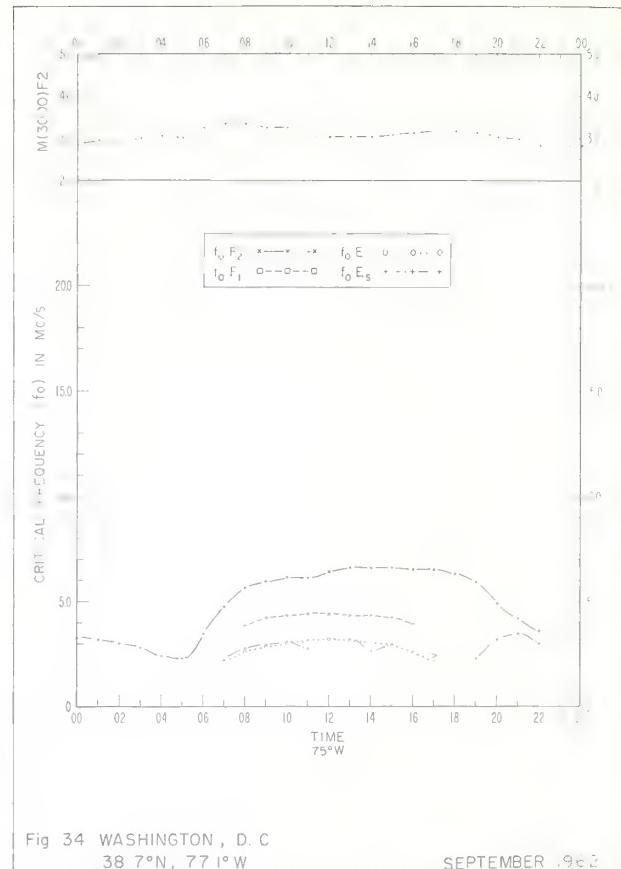
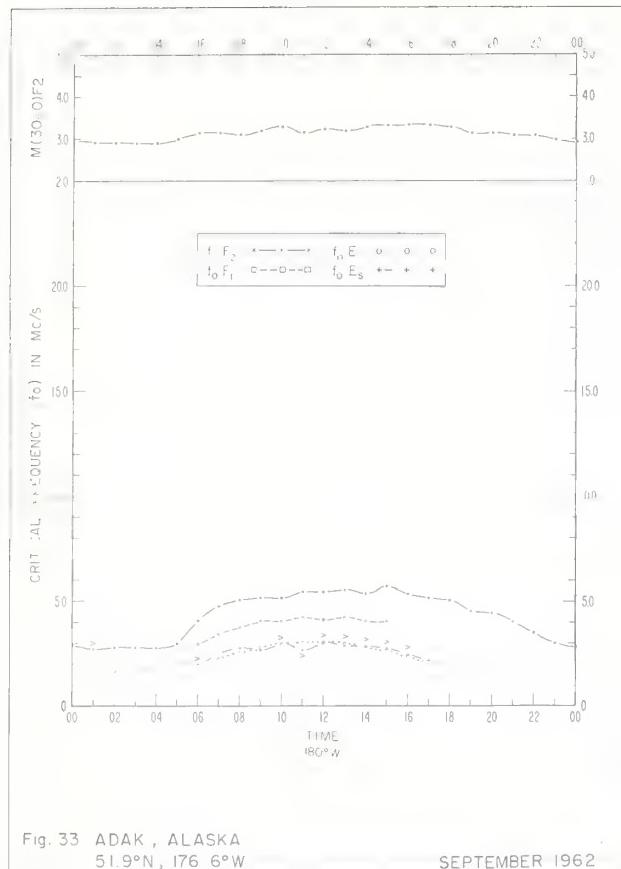


Fig. 32. REYKJAVIK, ICELAND
64.1°N, 21.8°W
SEPTEMBER 1962



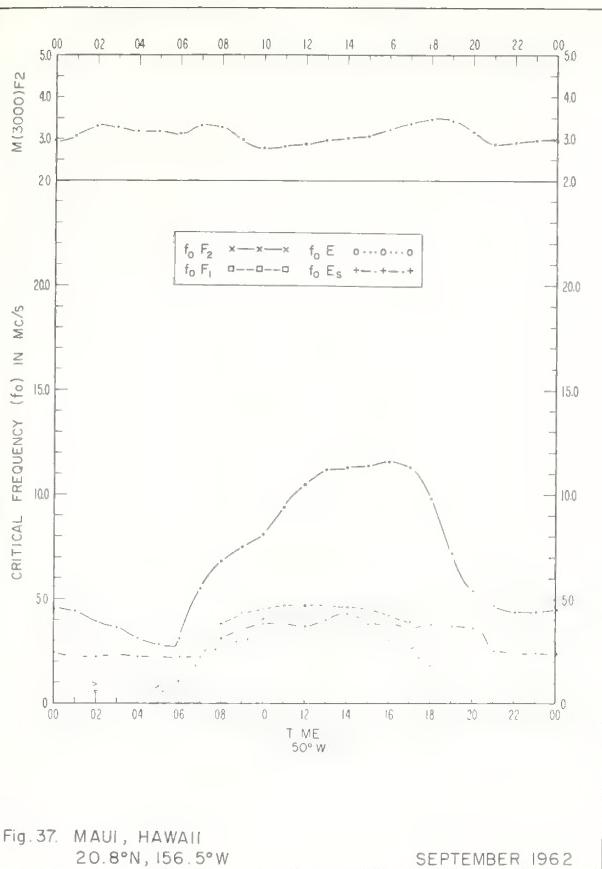


Fig. 37. MAUI, HAWAII
20.8°N, 156.5°W

SEPTEMBER 1962

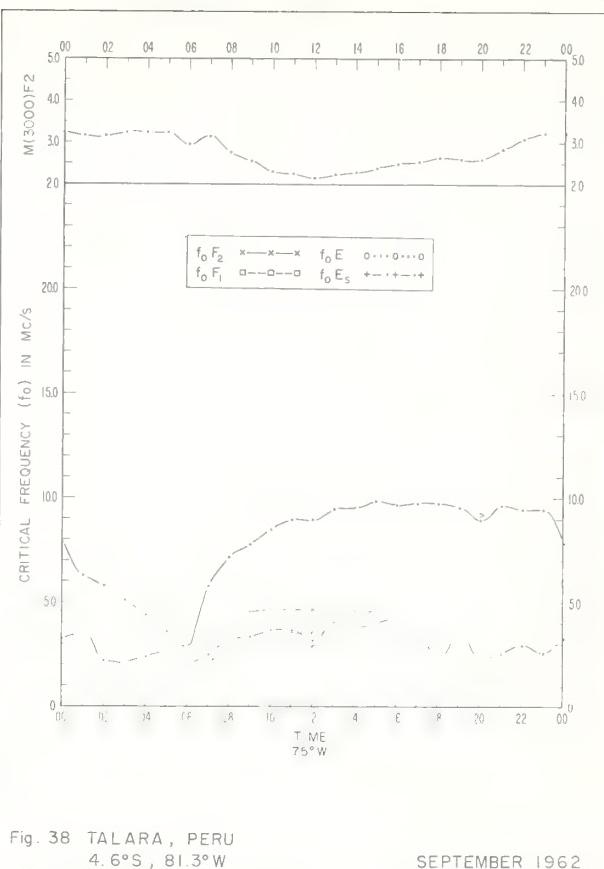


Fig. 38 TALARA, PERU
4.6°S, 81.3°W

SEPTEMBER 1962

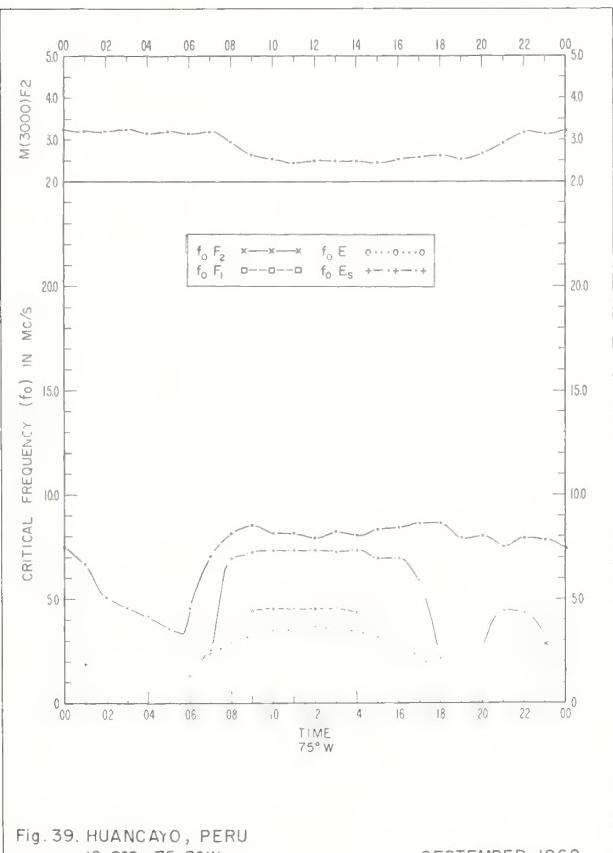


Fig. 39. HUANCAYO, PERU
12.0°S, 75.3°W

SEPTEMBER 1962

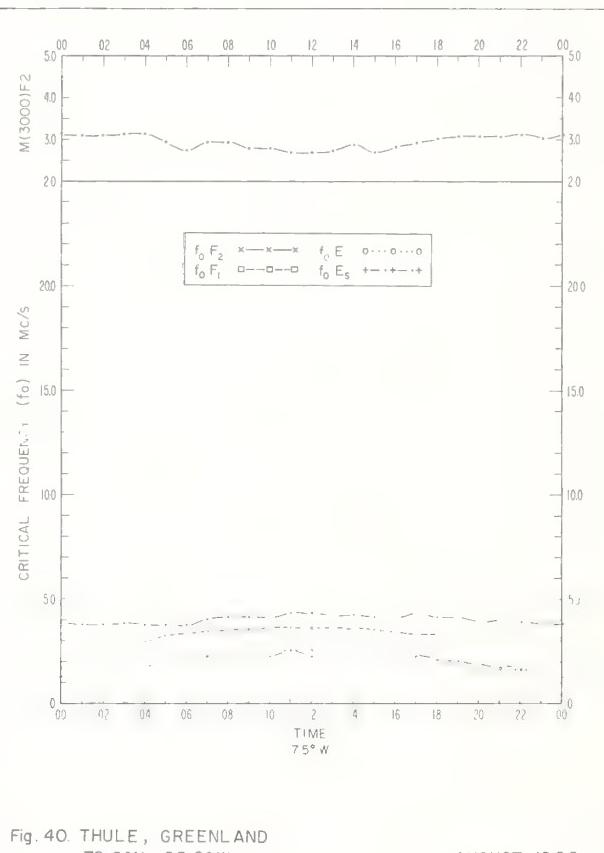
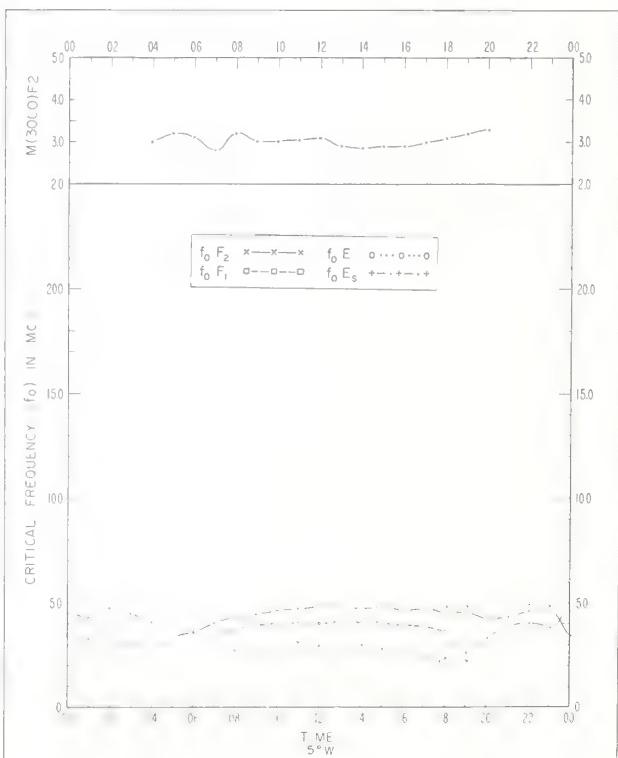
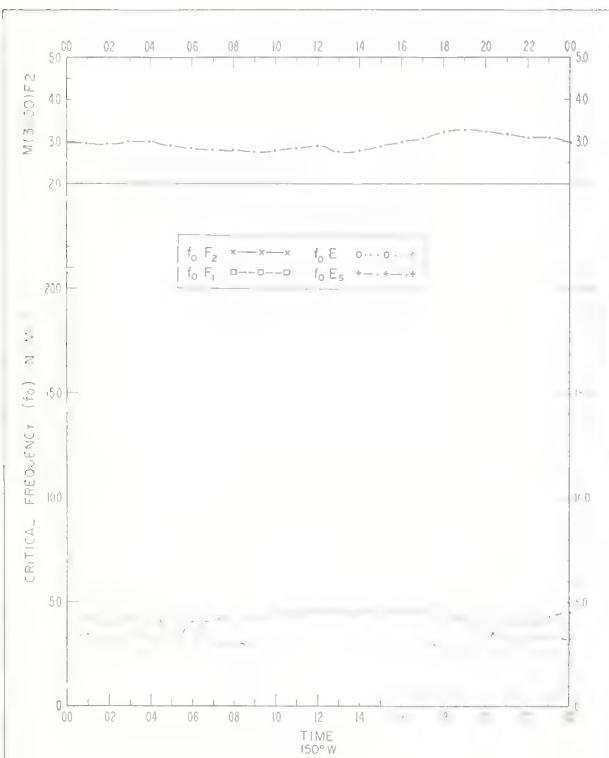
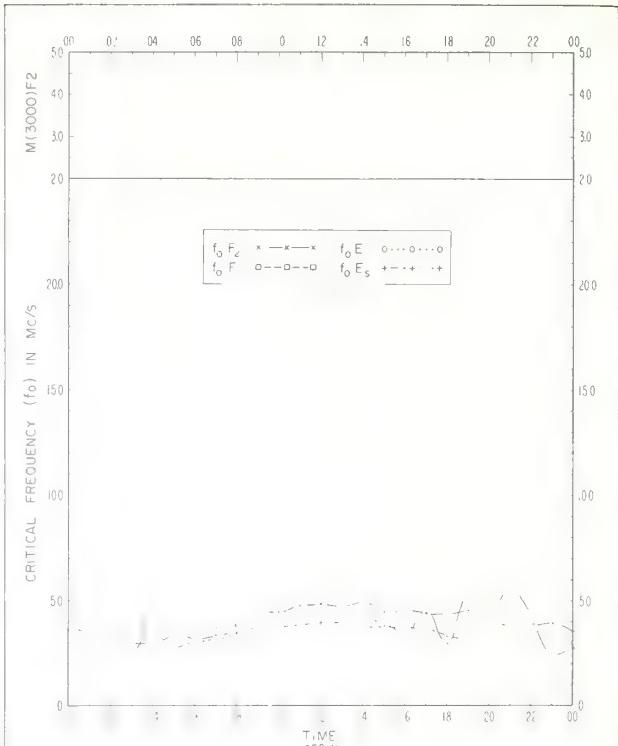
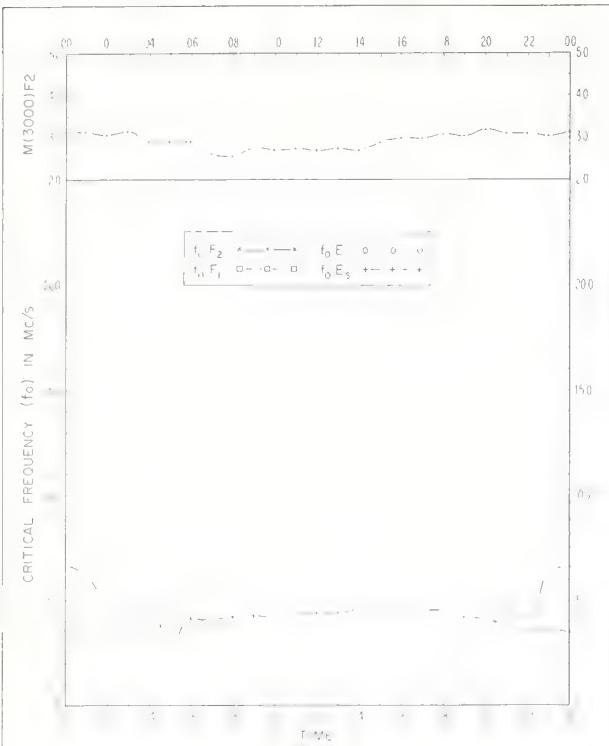


Fig. 40. THULE, GREENLAND
76.0°N, 68.0°W

AUGUST 1962



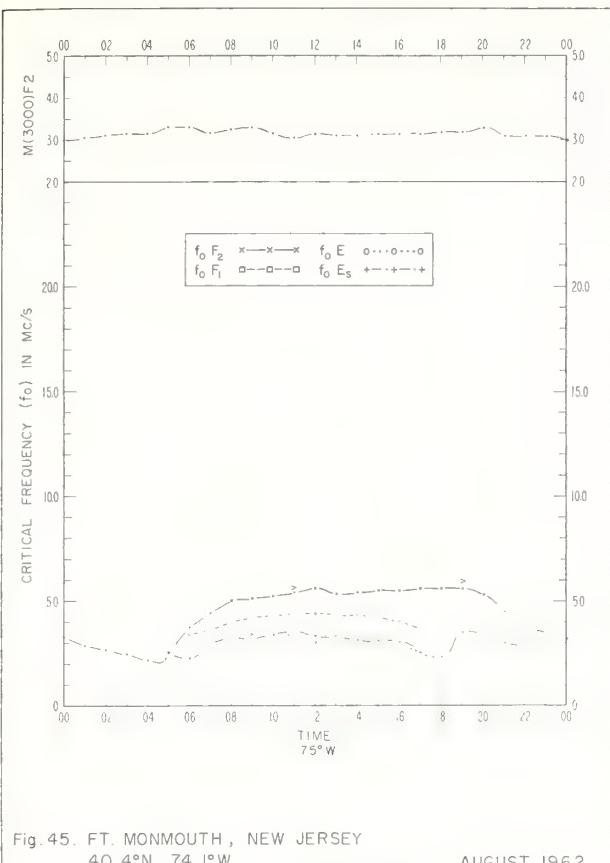


Fig. 45. FT. MONMOUTH, NEW JERSEY
40° 4'N, 74.1°W AUGUST 1962

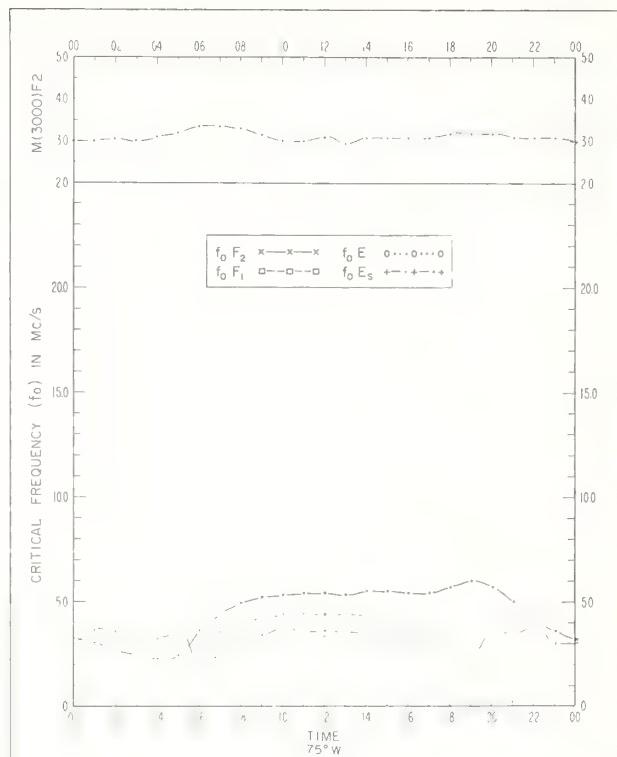


Fig. 46 WASHINGTON, D. C.
38° 7'N, 77° 1'W AUGUST 1962

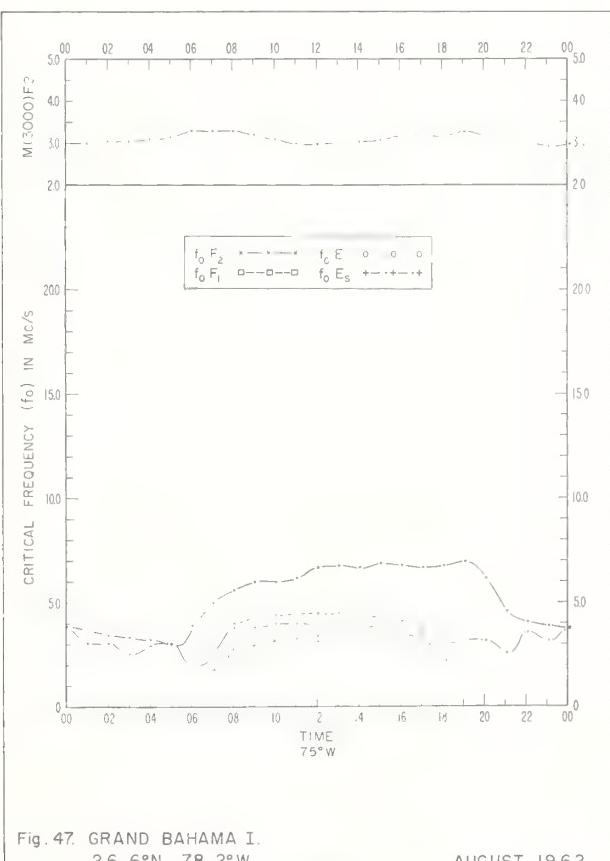


Fig. 47. GRAND BAHAMA I.
26.6°N, 78.2°W AUGUST 1962

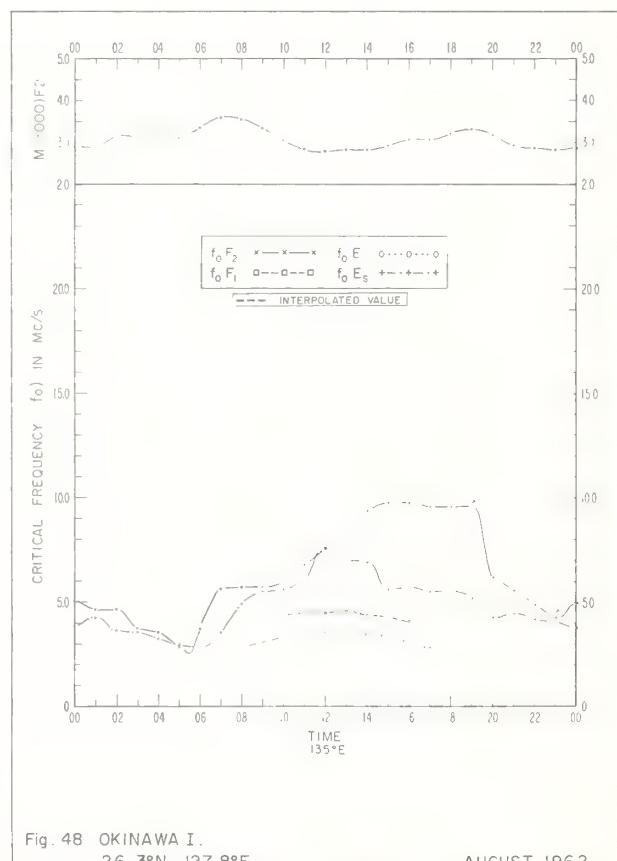
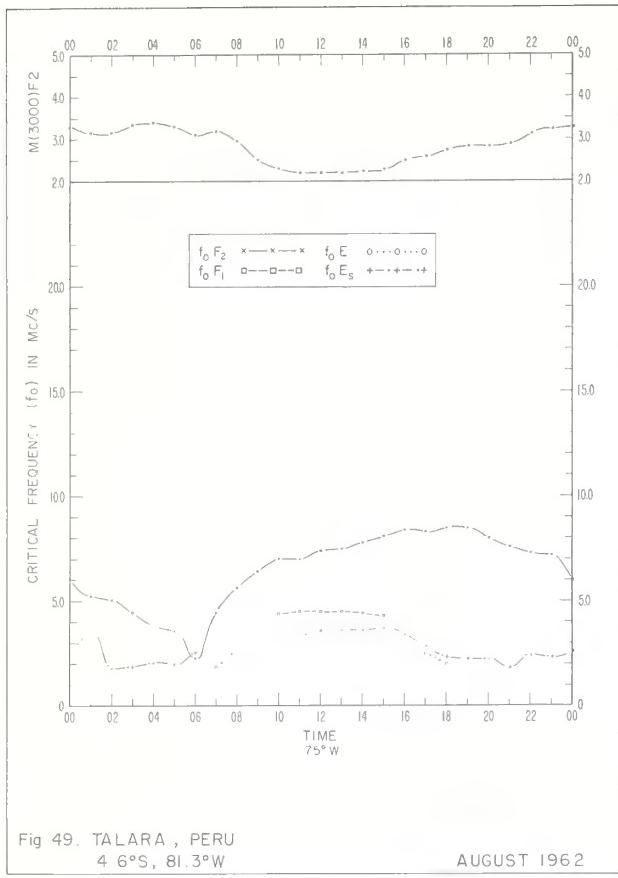
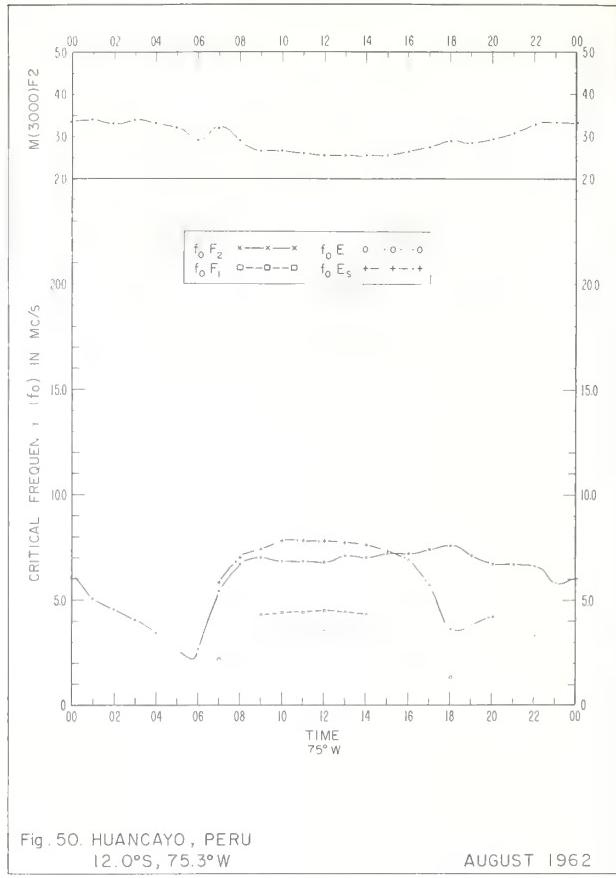


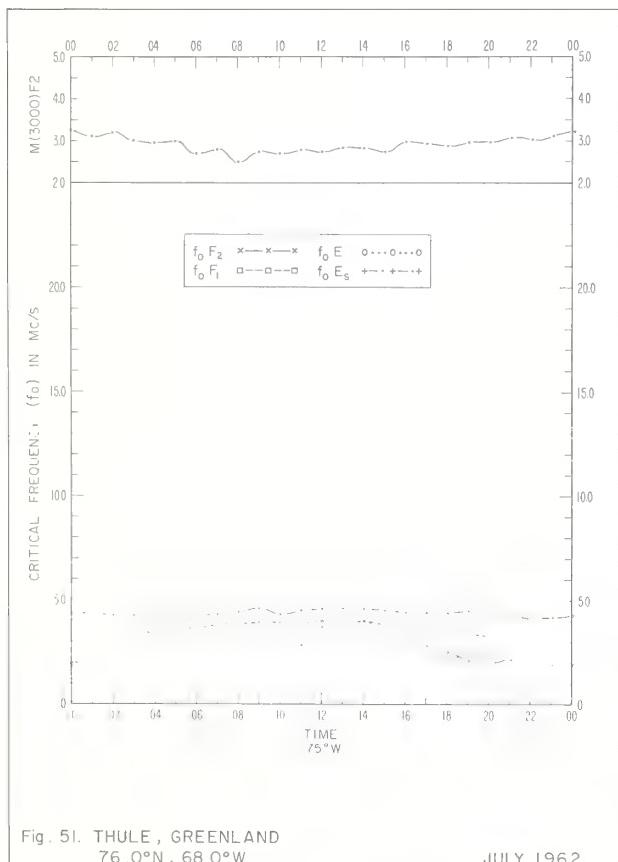
Fig. 48 OKINAWA I.
26.3°N, 127.8°E AUGUST 1962

Fig. 49. TALARA, PERU
4°S, 81.3°W

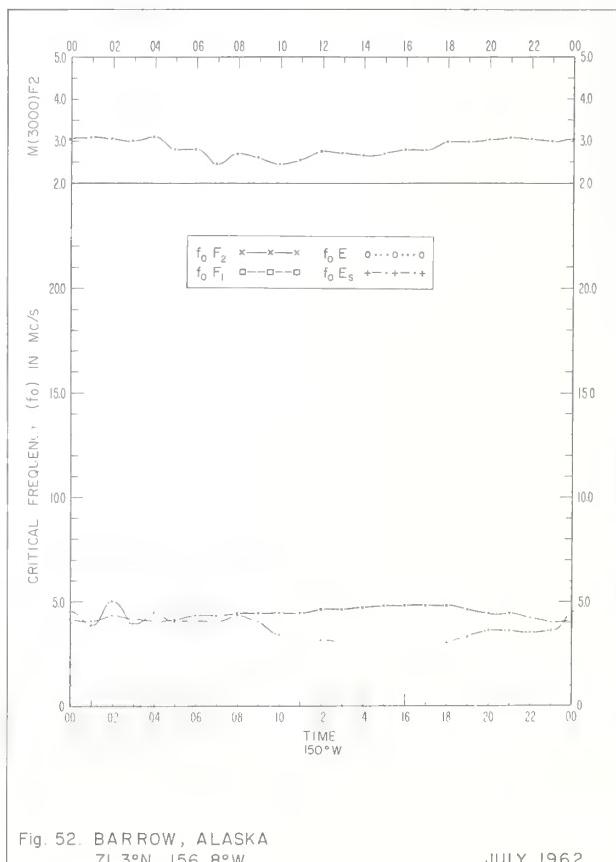
AUGUST 1962

Fig. 50. HUANCAYO, PERU
12.0°S, 75.3°W

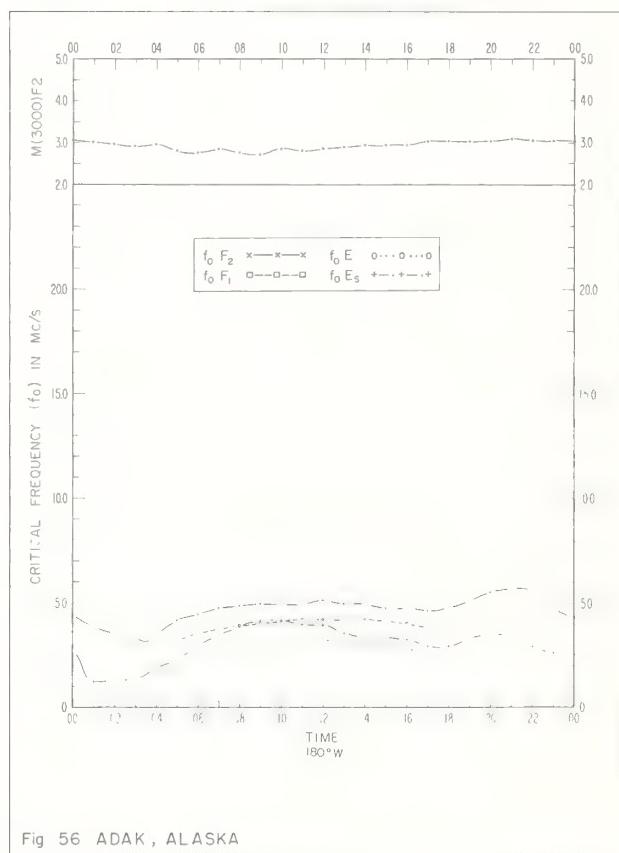
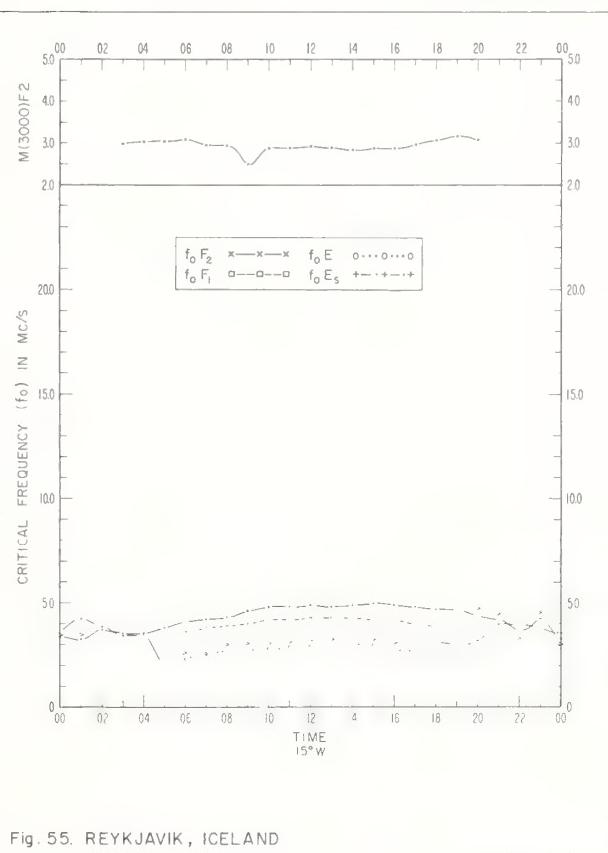
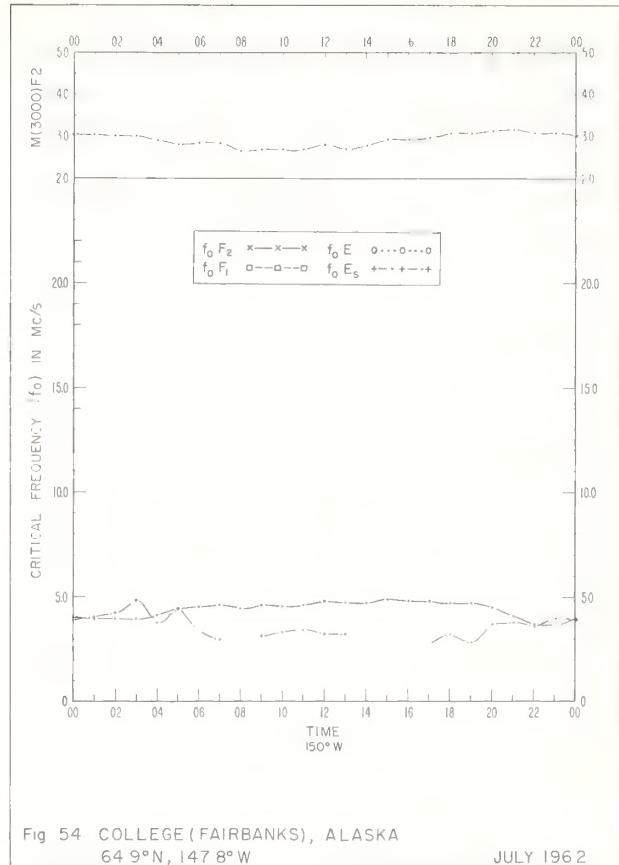
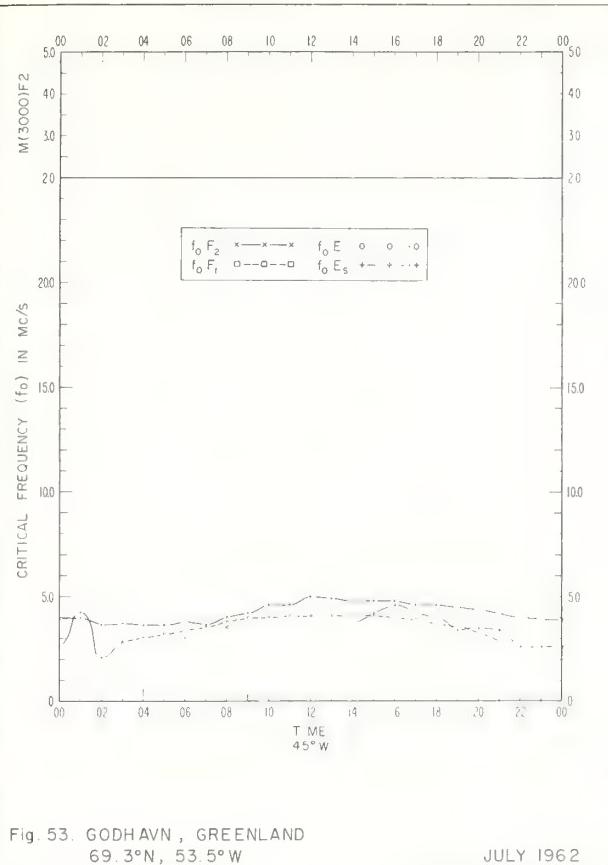
AUGUST 1962

Fig. 51. THULE, GREENLAND
76.0°N, 68.0°W

JULY 1962

Fig. 52. BARROW, ALASKA
71.3°N, 156.8°W

JULY 1962



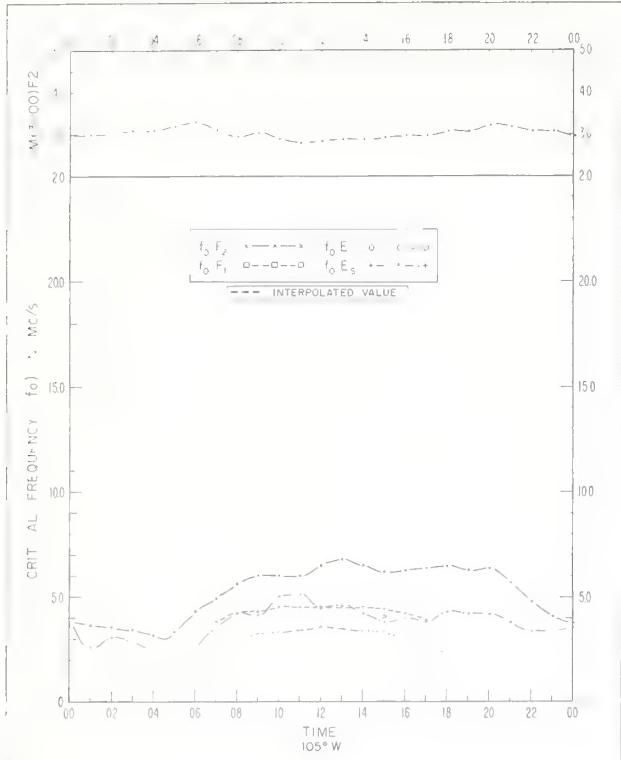


Fig. 57. WHITE SANDS , NEW MEXICO
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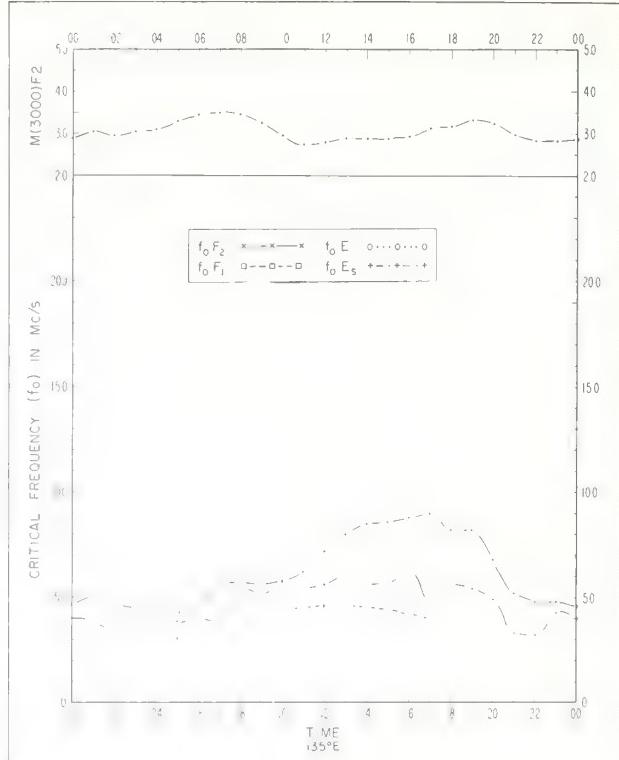


Fig. 58 OKINAWA I.
26. 3°N, 127. 8°E JULY 1962

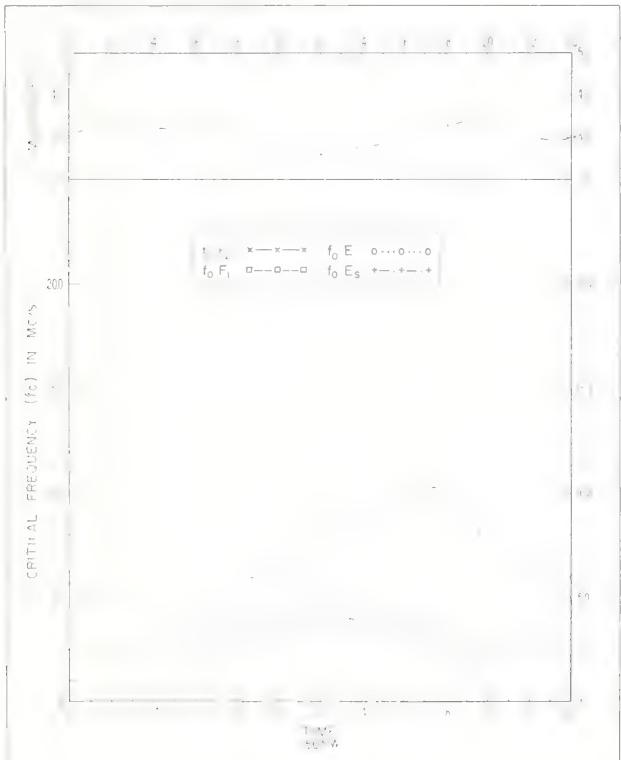


Fig. 59 MAUI , HAWAII
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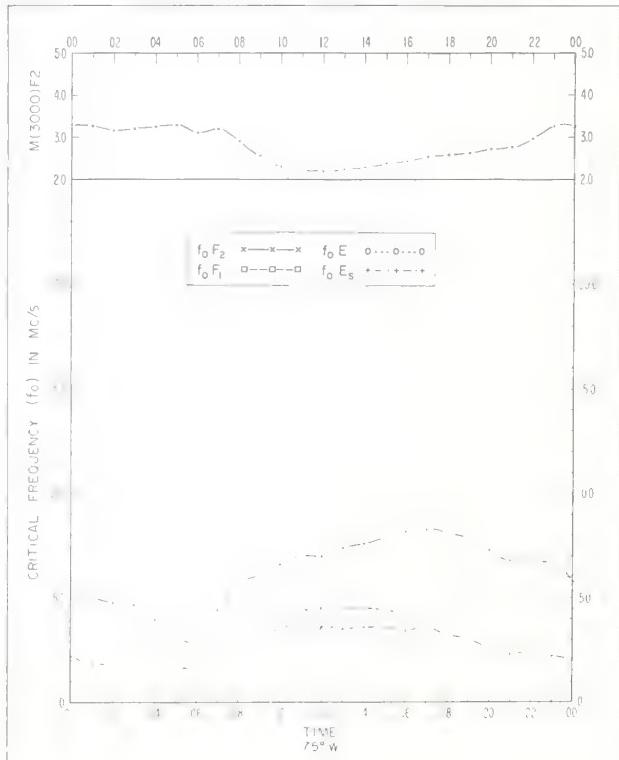


Fig. 60. TALARA , PERU
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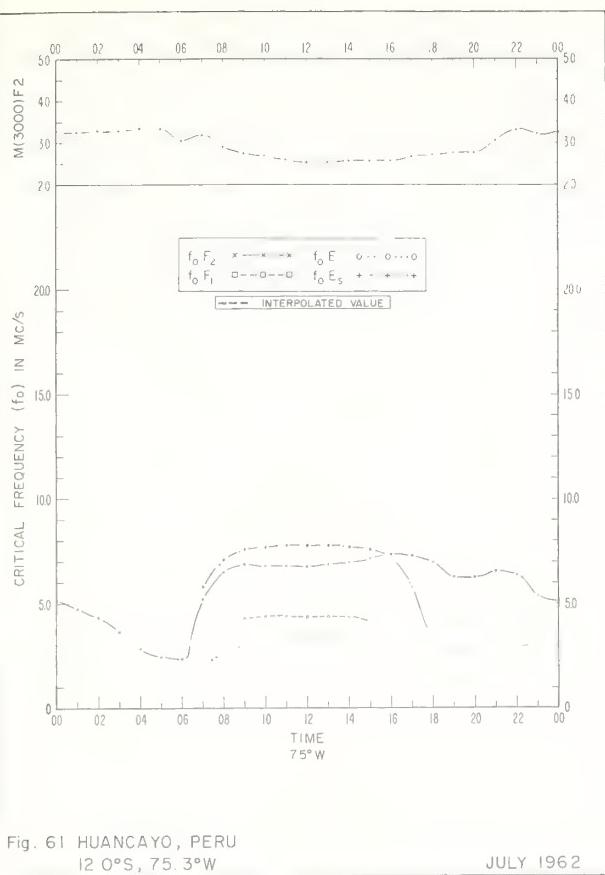


Fig. 61 HUANCAYO, PERU
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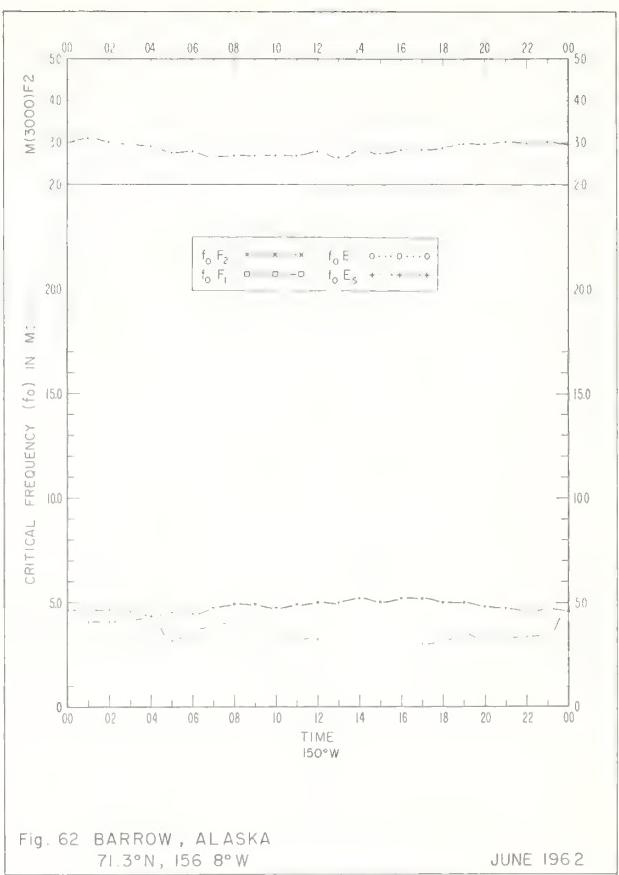


Fig. 62 BARROW, ALASKA
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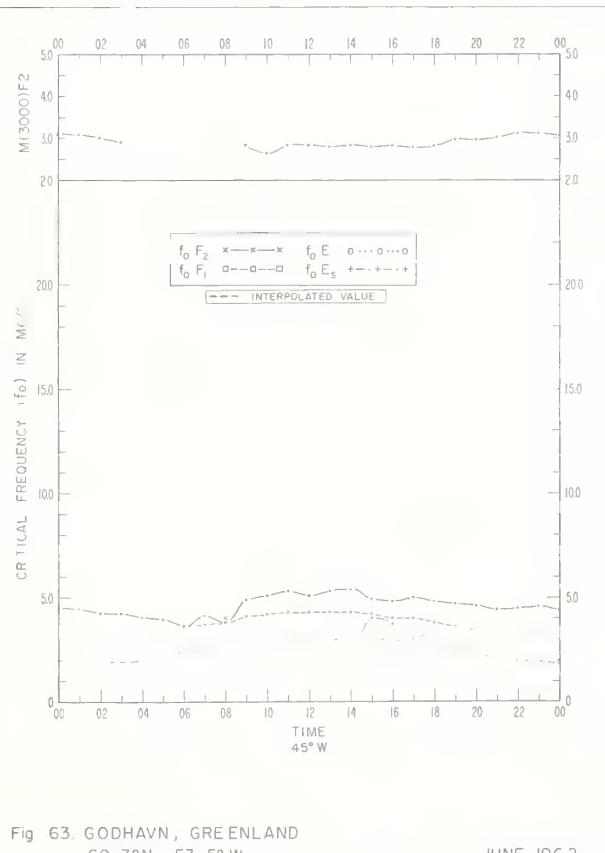


Fig. 63. GODHAVN, GREENLAND
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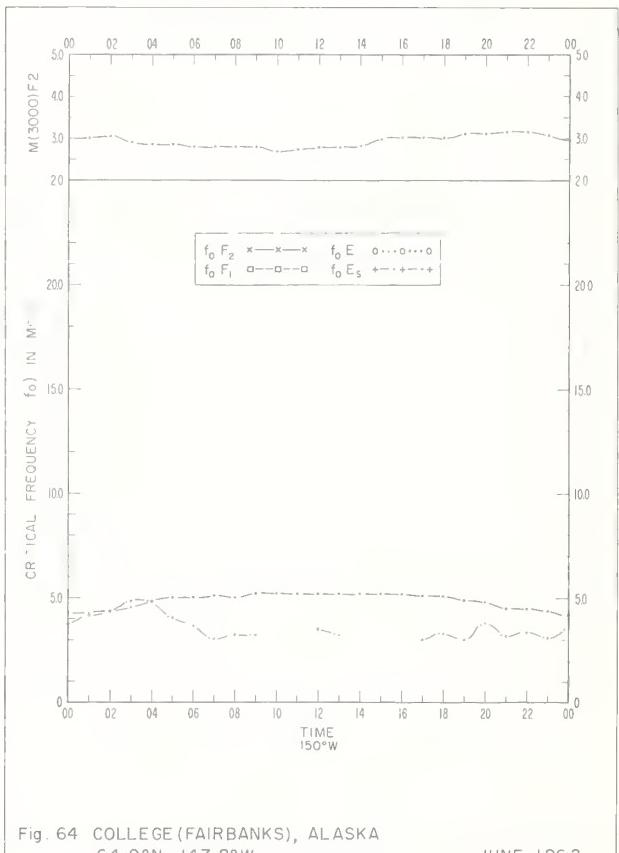
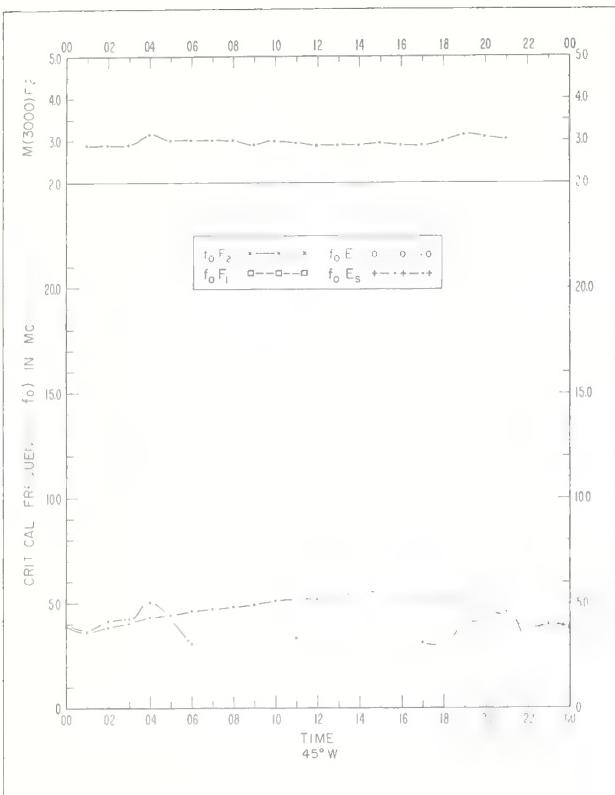
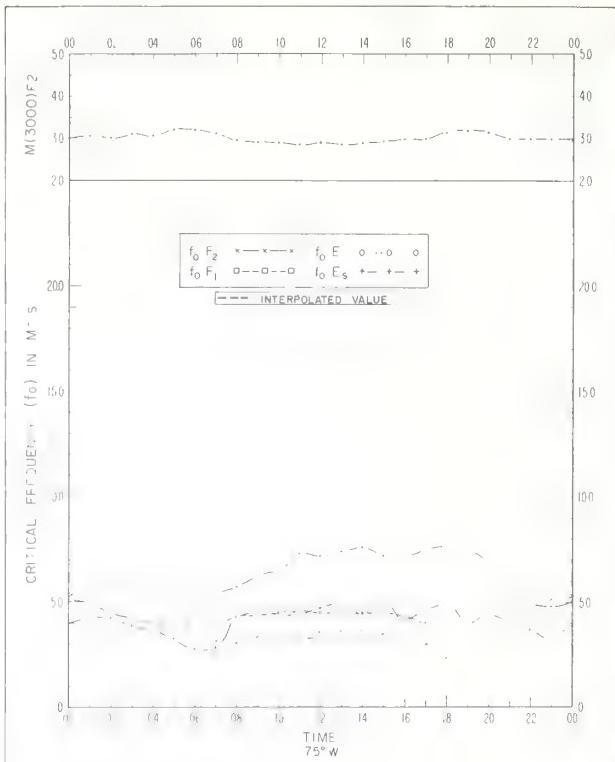


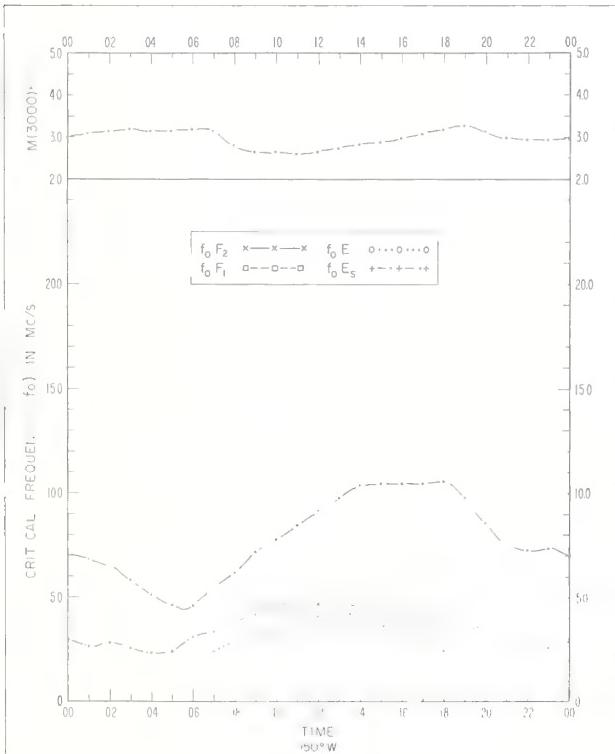
Fig. 64 COLLEGE (FAIRBANKS), ALASKA
64.9°N, 147.8°W JUNE 1962

Fig 65 NARSSARSSUAQ, GREENLAND
61 2°N, 45 4°W

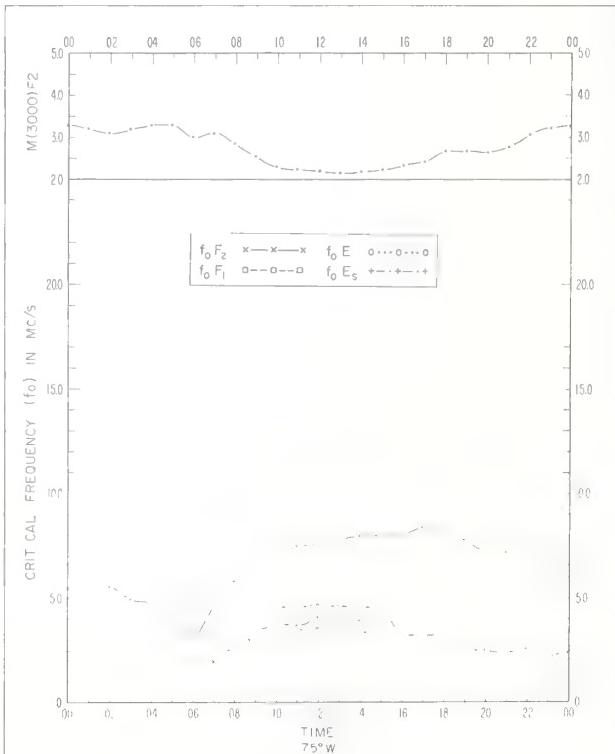
JUNE 1962

Fig 66 GRAND BAHAMA I.
26 6°N, 78 2°W

JUNE 1962

Fig 67 MAUI, HAWAII
20 8°N, 156 5°W

JUNE 1962

Fig 68. TALARA, PERU
4 6°S, 81 3°W

JUNE 1962

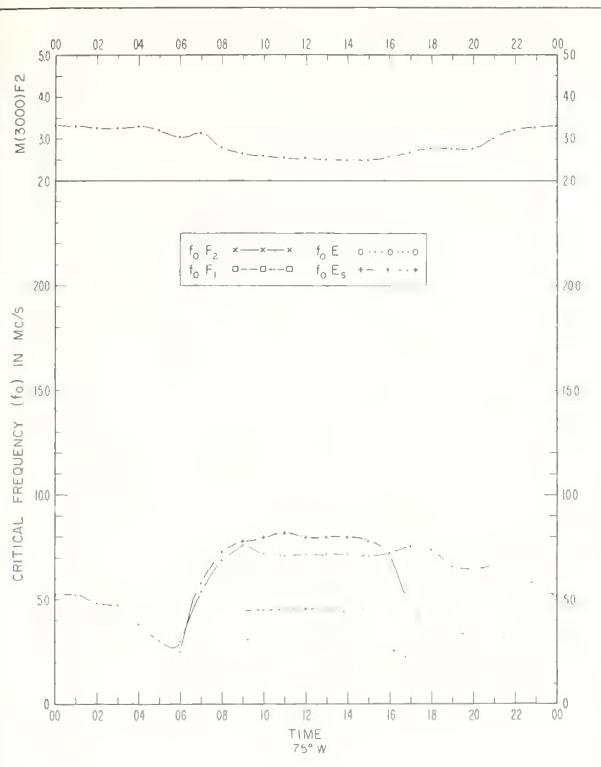


Fig. 69 HUANCAYO, PERU
12.0°S, 75.3°W

JUNE 1962

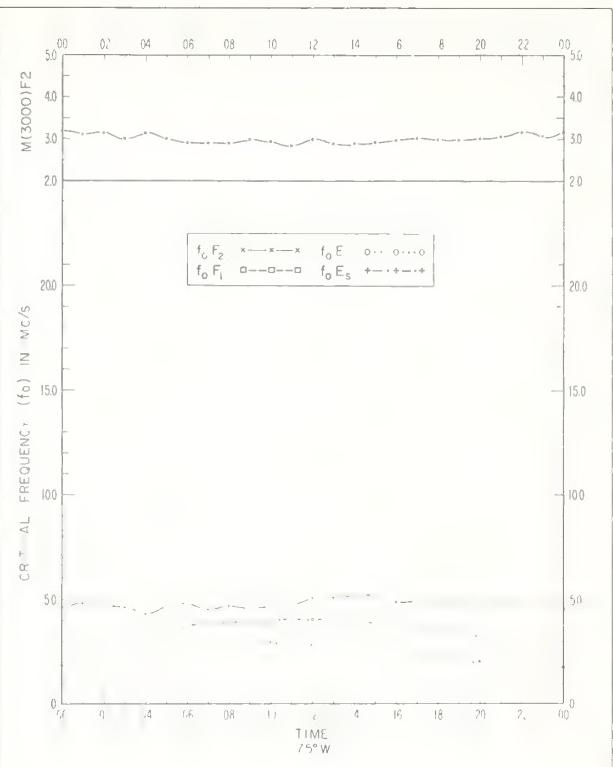


Fig. 70. THULE, GREENLAND
76.0°N, 68.0°W

MAY 1962

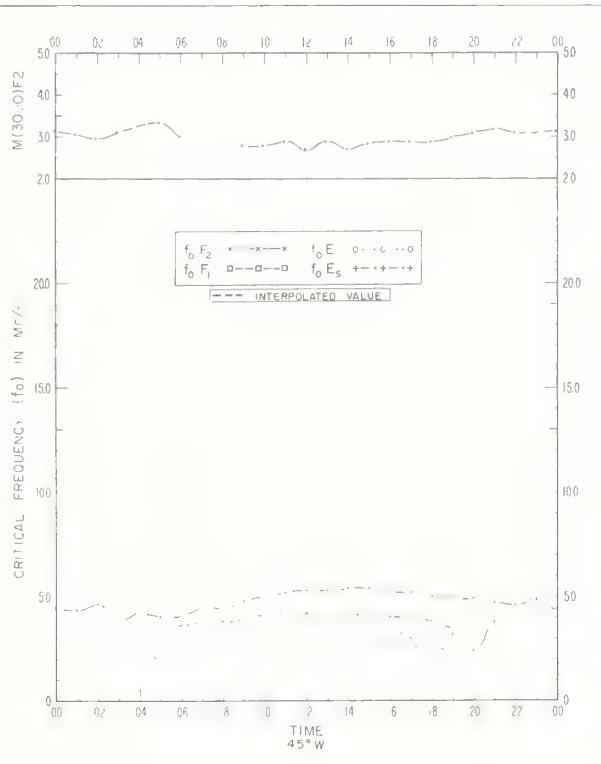


Fig. 71 GODHAVN, GREENLAND
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MAY 1962

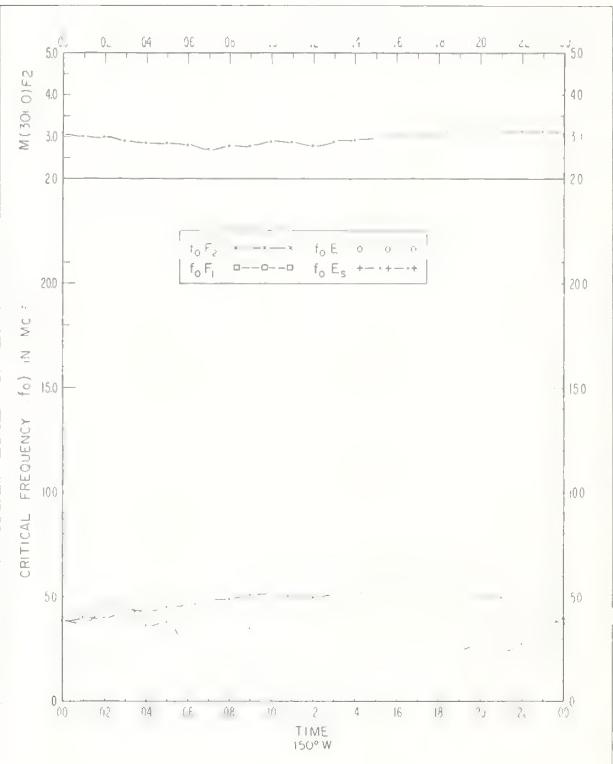


Fig. 72. COLLEGE(FAIRBANKS), ALASKA
64.9°N, 147.8°W

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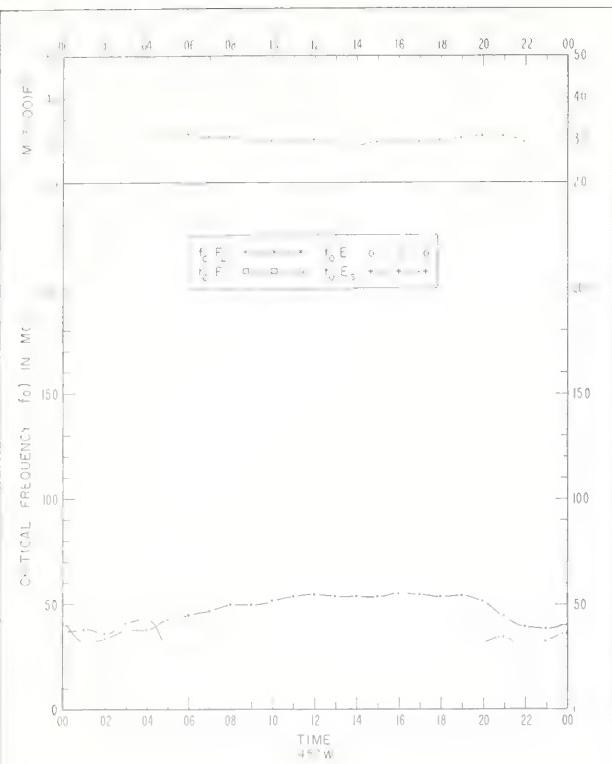


Fig. 73 NARSSARSSUAQ , GREENLAND
61 2°N , 45 4°W

MAY 1962

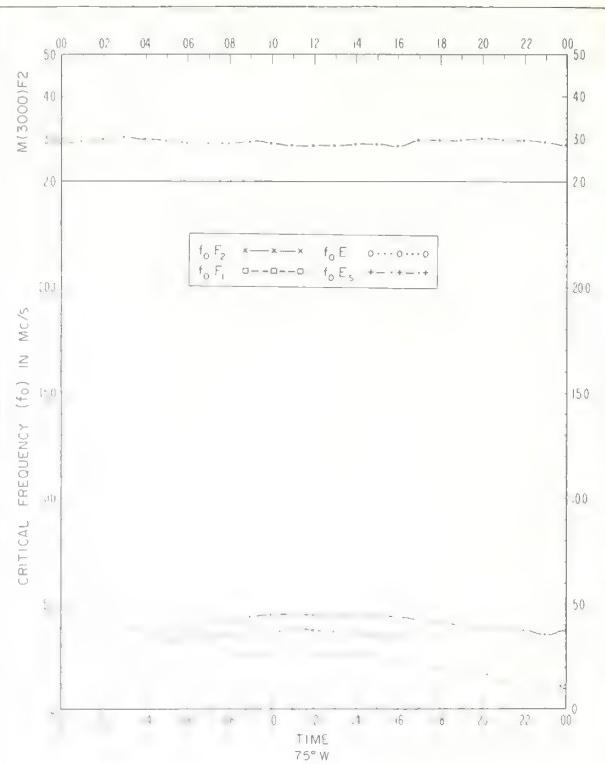


Fig. 74 THULE , GREENLAND
76 0°N , 68 0°W

APRIL 1962

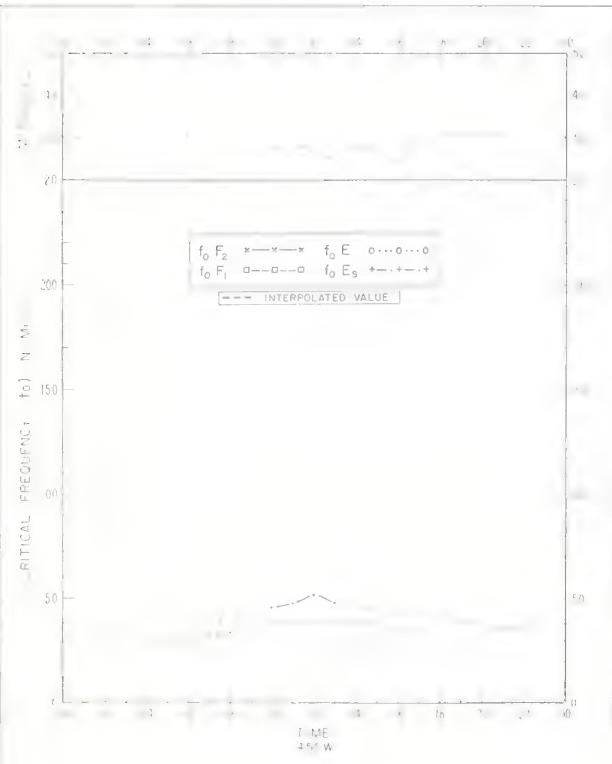


Fig. 75 GODHAVN , GREENLAND
69 3°N , 53 5°W

APRIL 1962

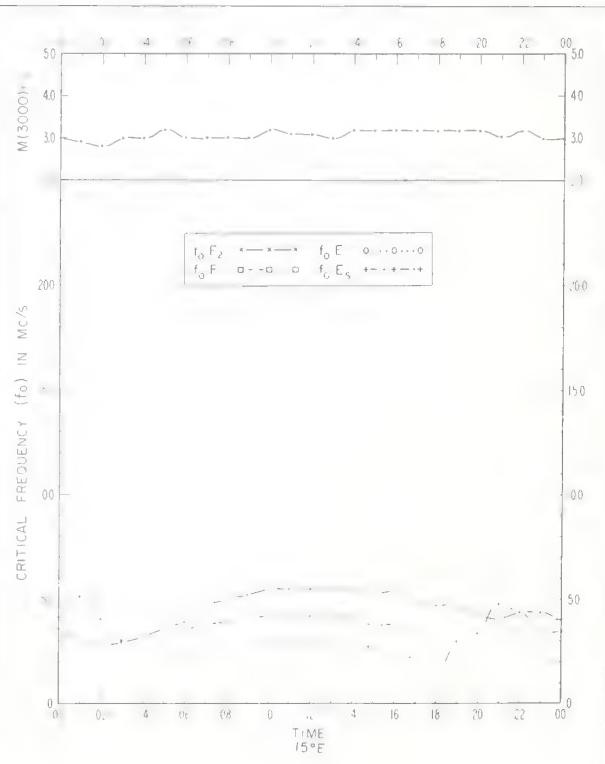
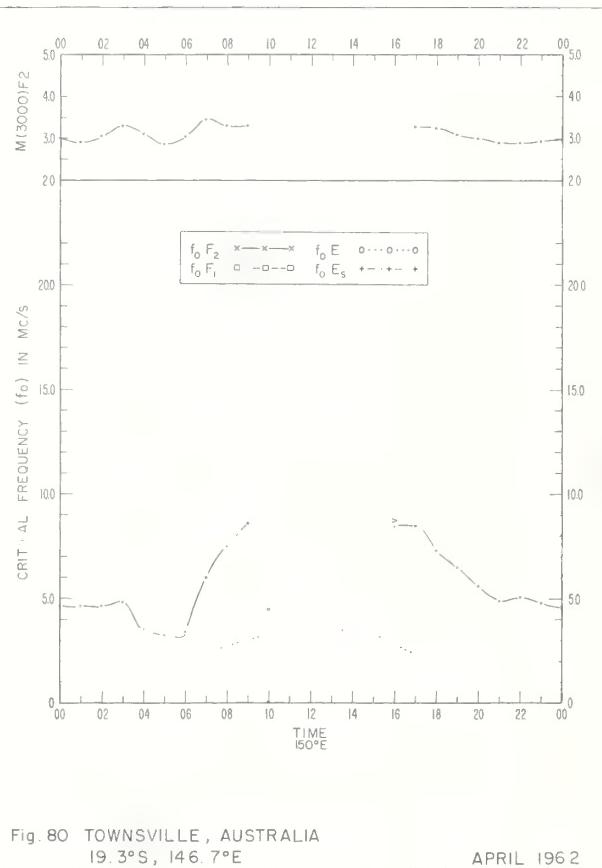
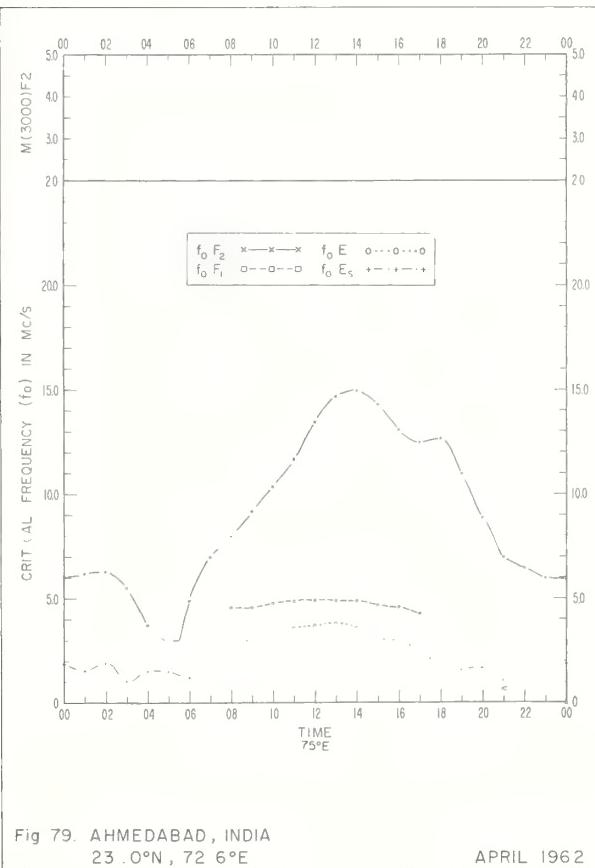
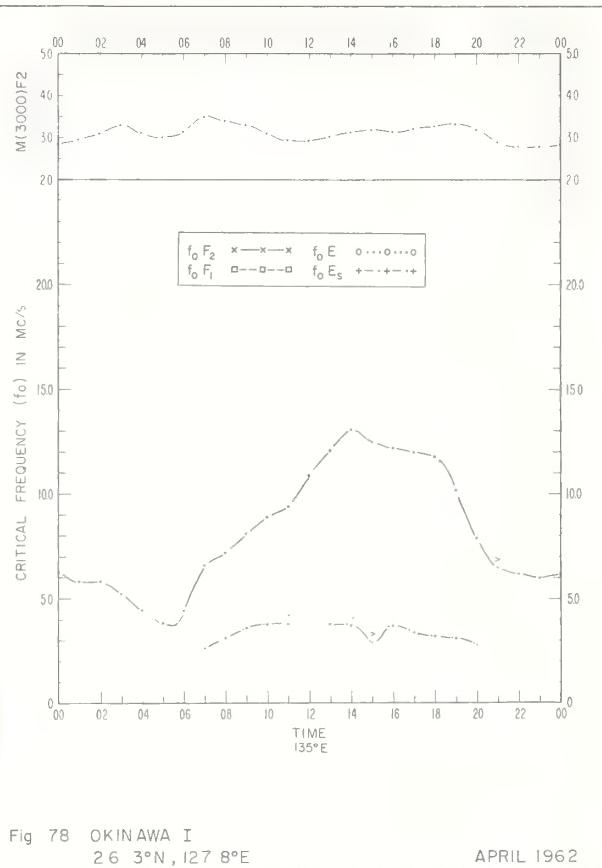
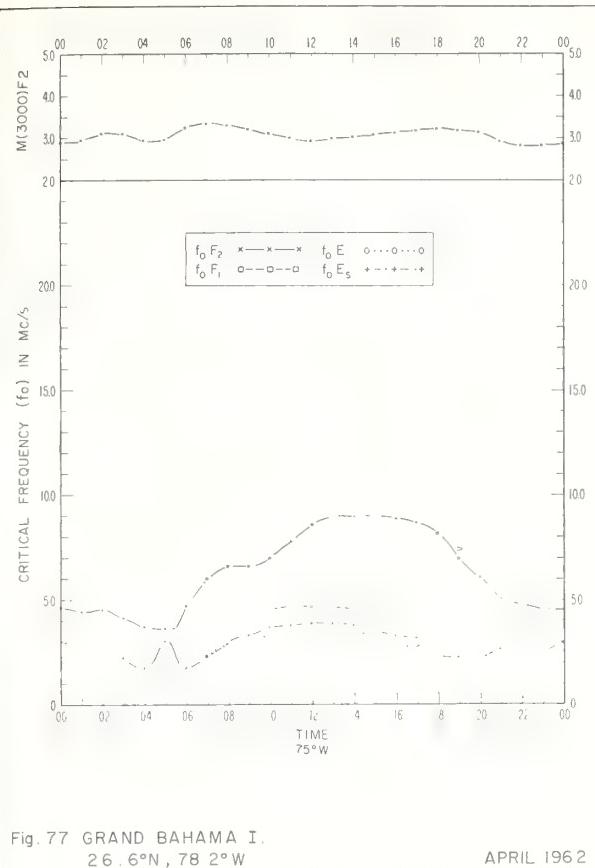
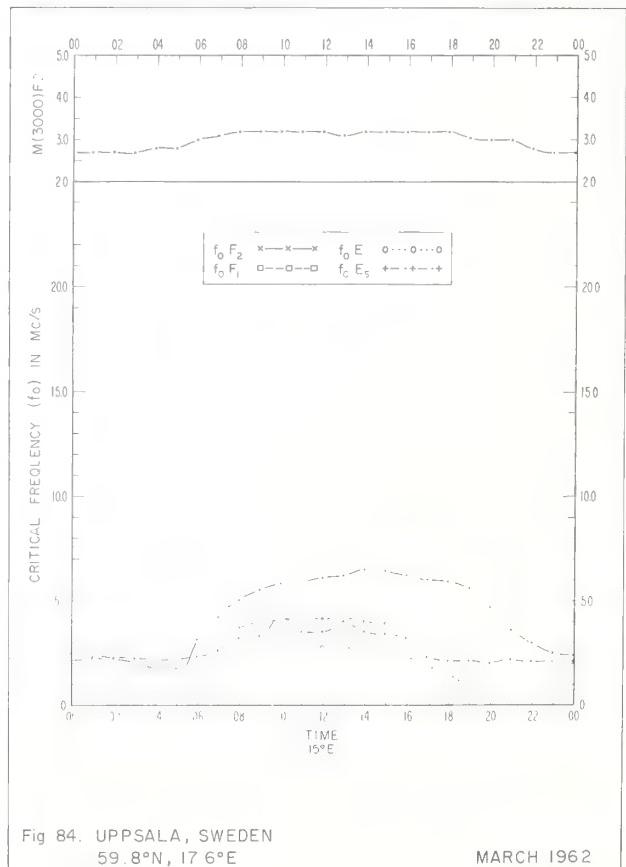
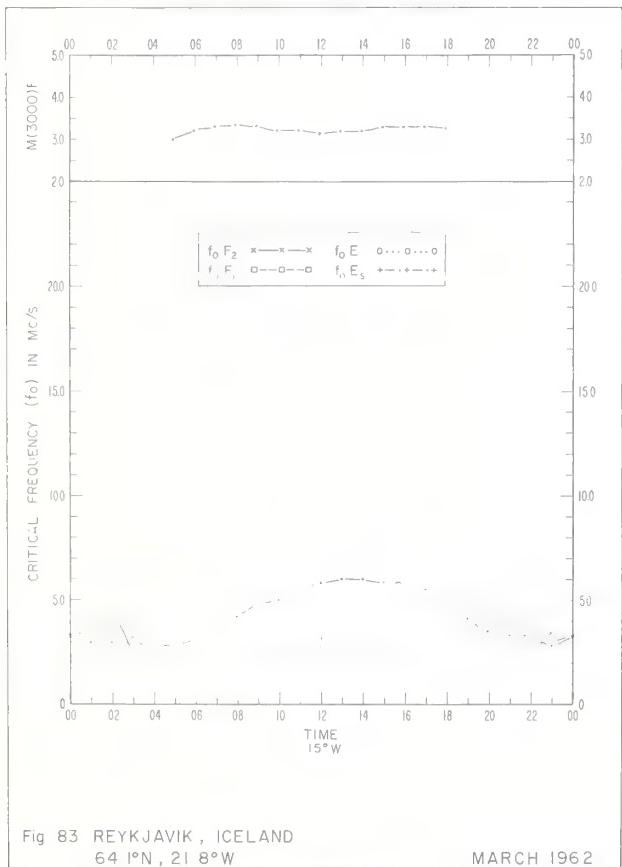
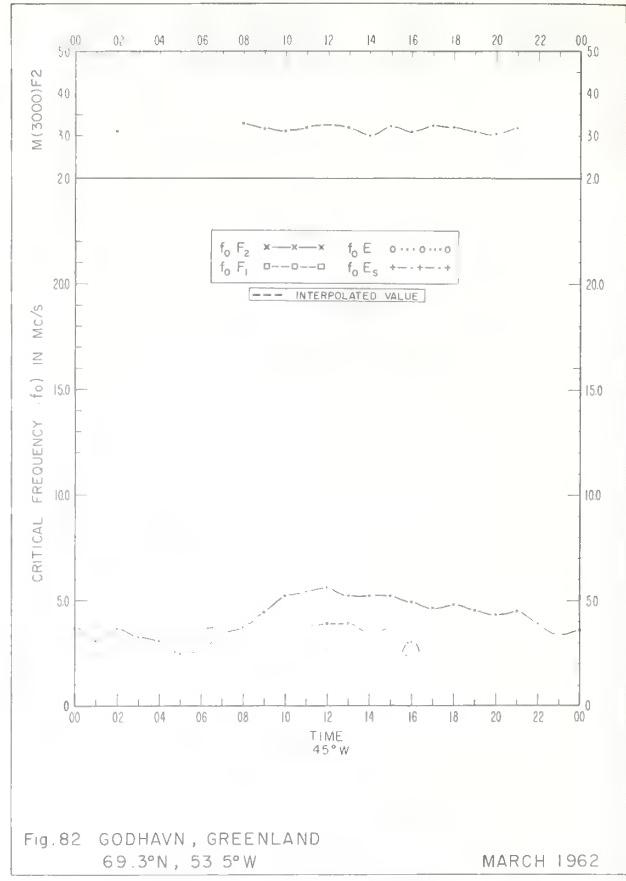
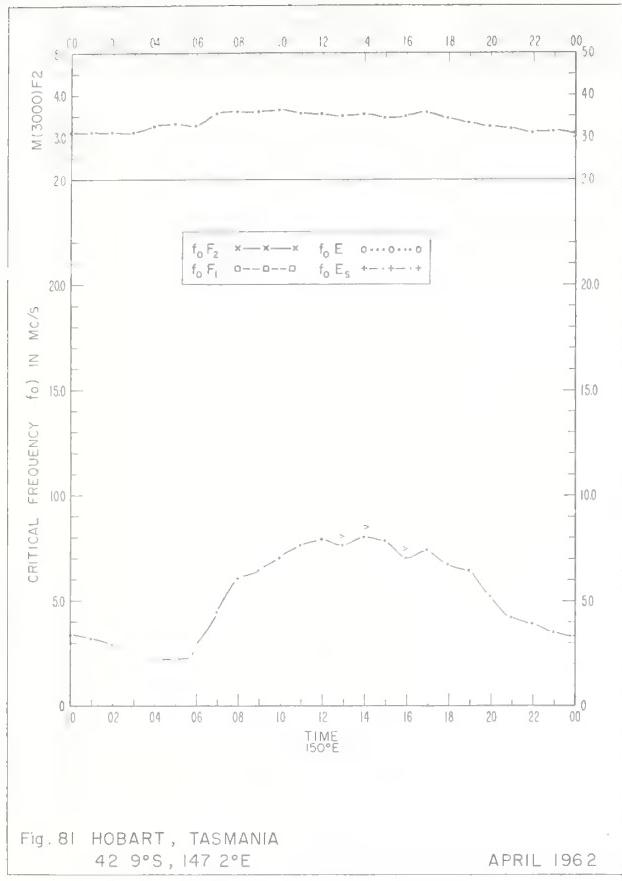


Fig. 76 KIRUNA , SWEDEN
67 8°N , 20. 4°E

APRIL 1962





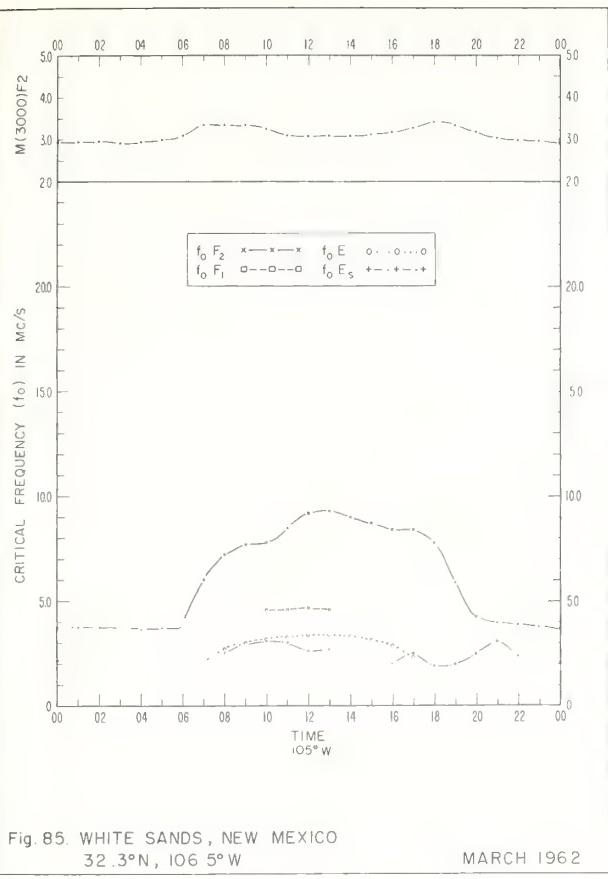


Fig. 85. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W MARCH 1962

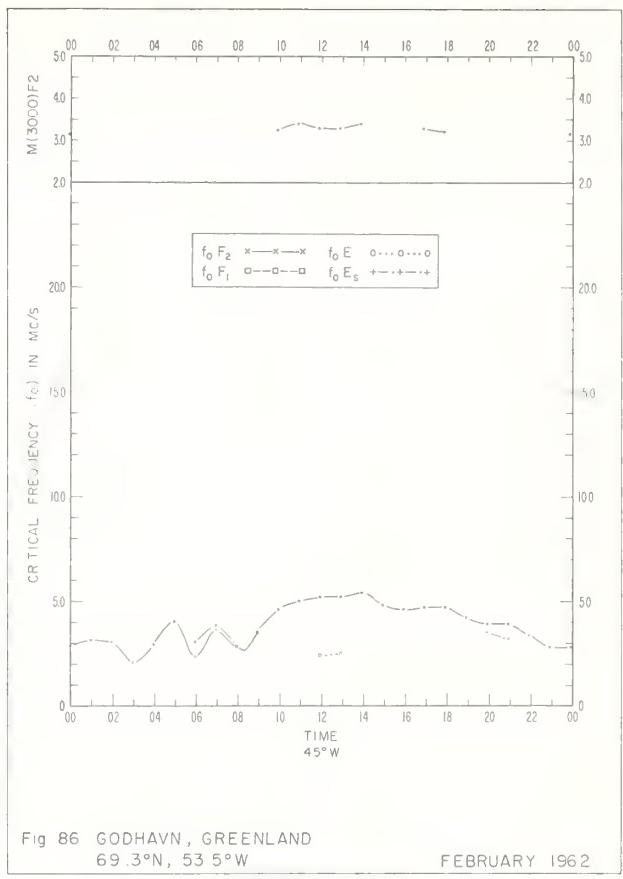


Fig. 86 GODHAVN, GREENLAND
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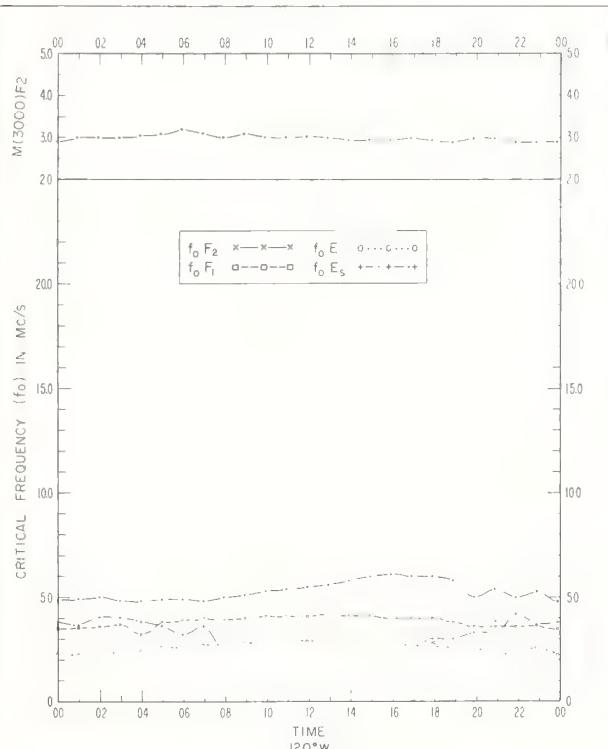


Fig. 87. BYRD STATION, ANTARCTICA
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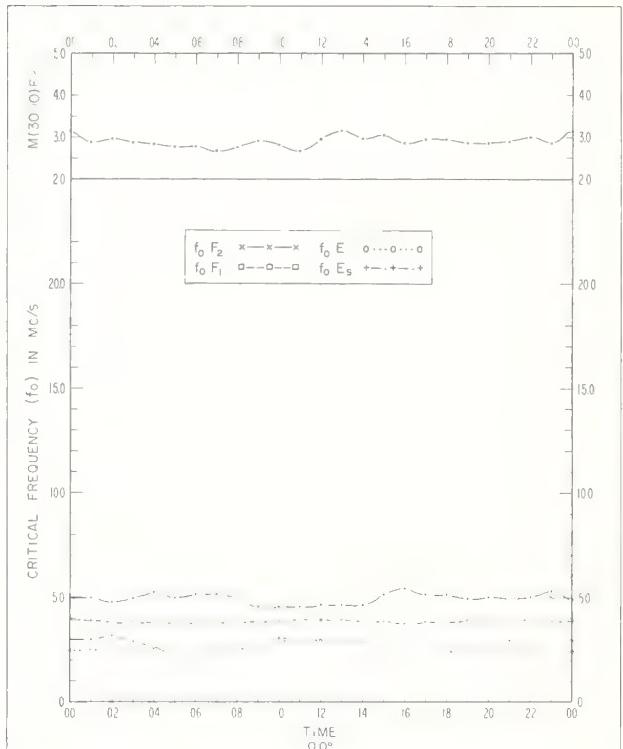


Fig. 88 POLE STATION, ANTARCTICA
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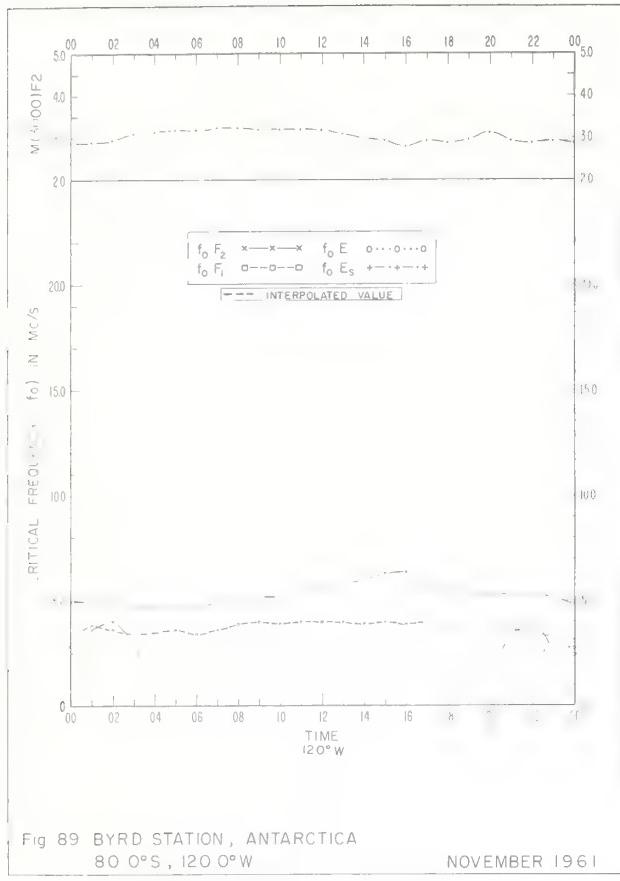


Fig. 89 BYRD STATION, ANTARCTICA
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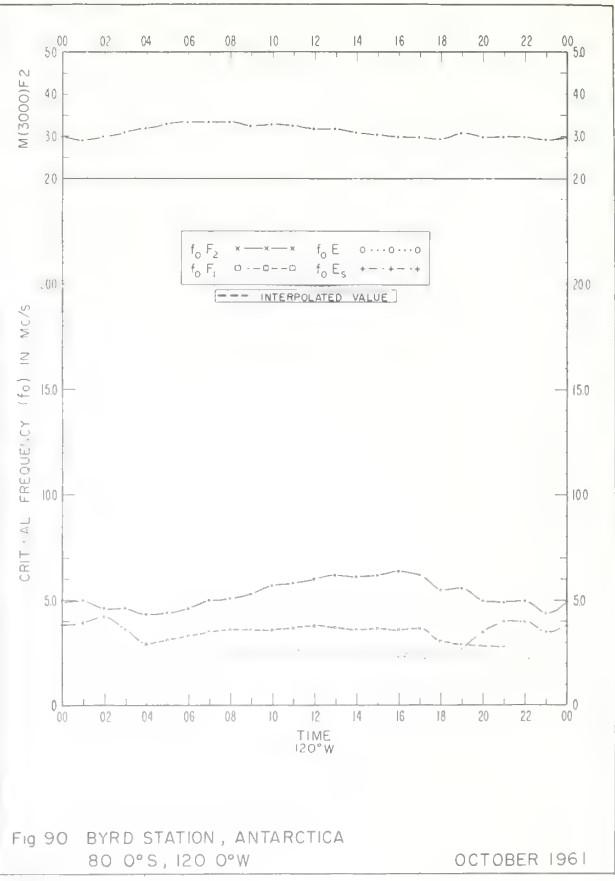


Fig. 90 BYRD STATION, ANTARCTICA
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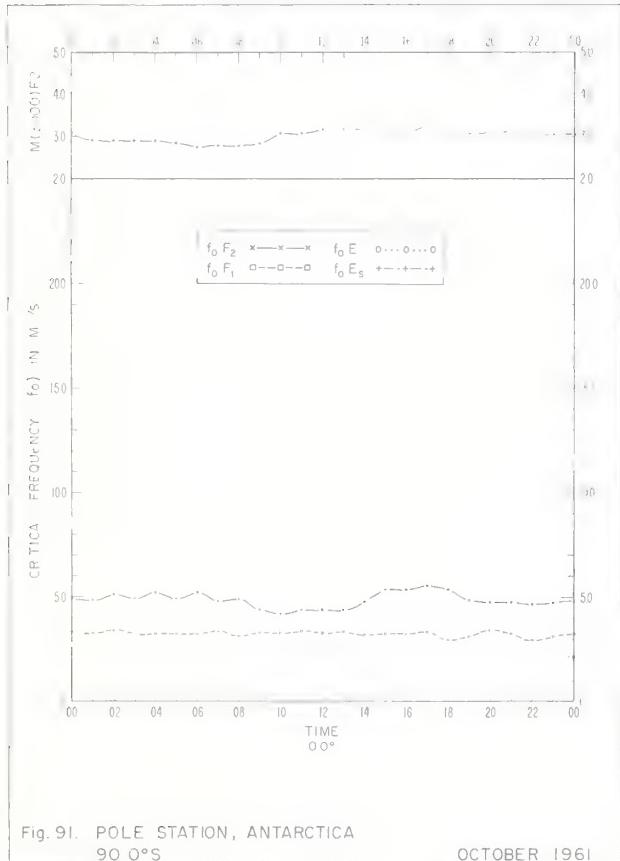


Fig. 91 POLE STATION, ANTARCTICA
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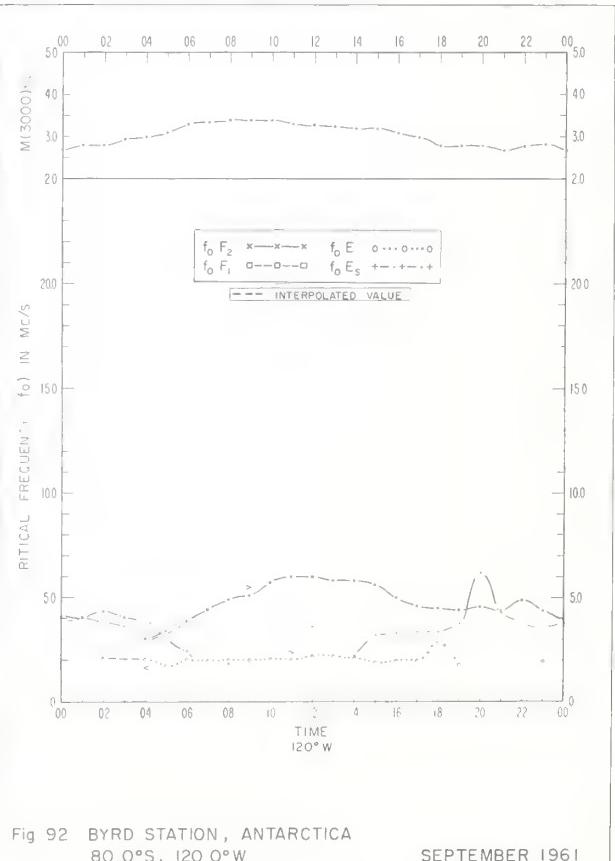


Fig. 92 BYRD STATION, ANTARCTICA
80°S, 120°W SEPTEMBER 1961

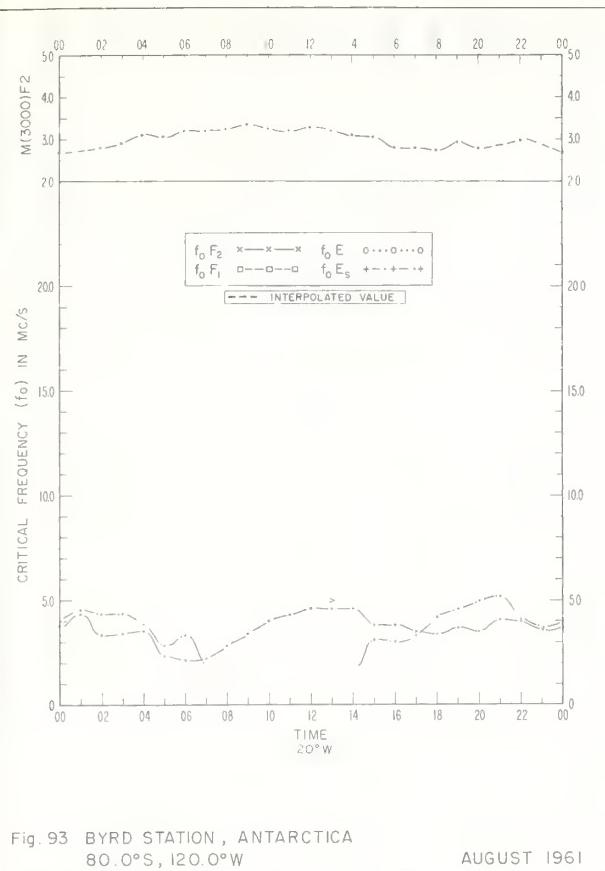


Fig. 93 BYRD STATION, ANTARCTICA
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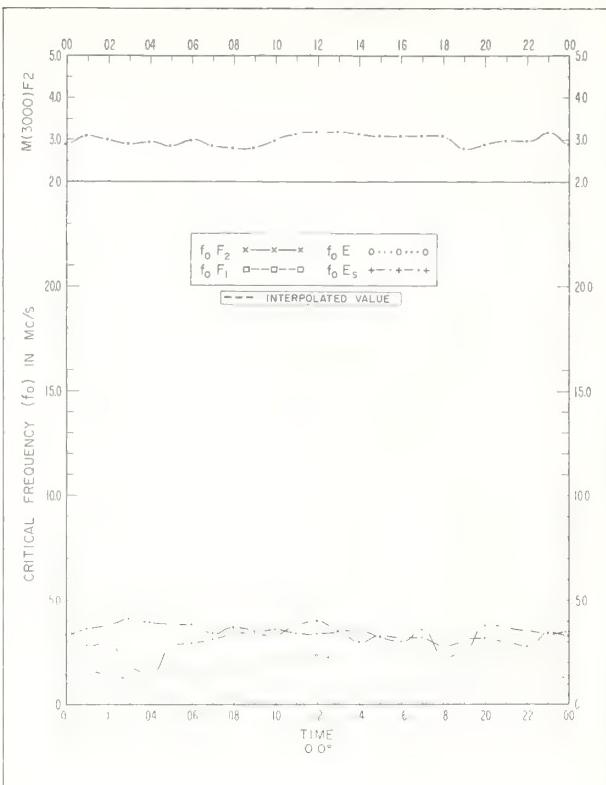


Fig. 94 POLE STATION, ANTARCTICA
90.0°S AUGUST 1961

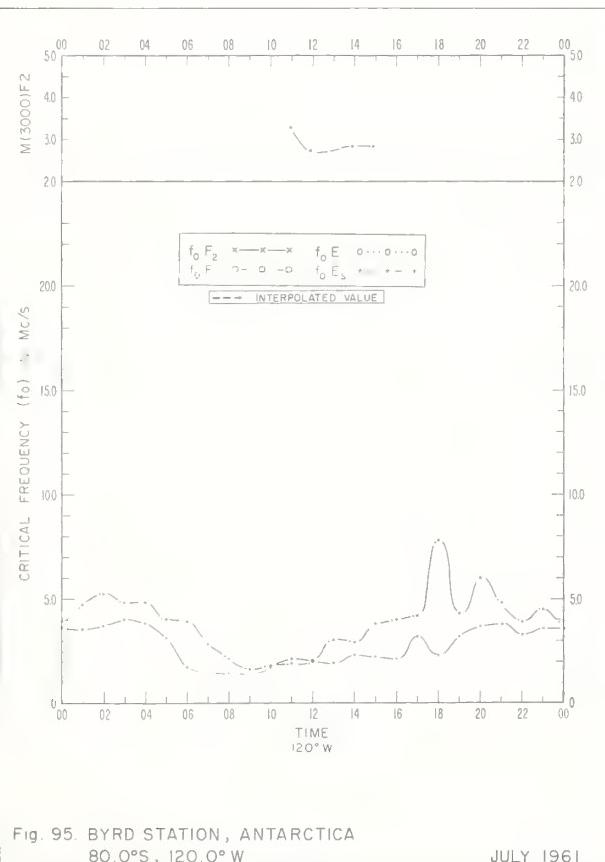


Fig. 95. BYRD STATION, ANTARCTICA
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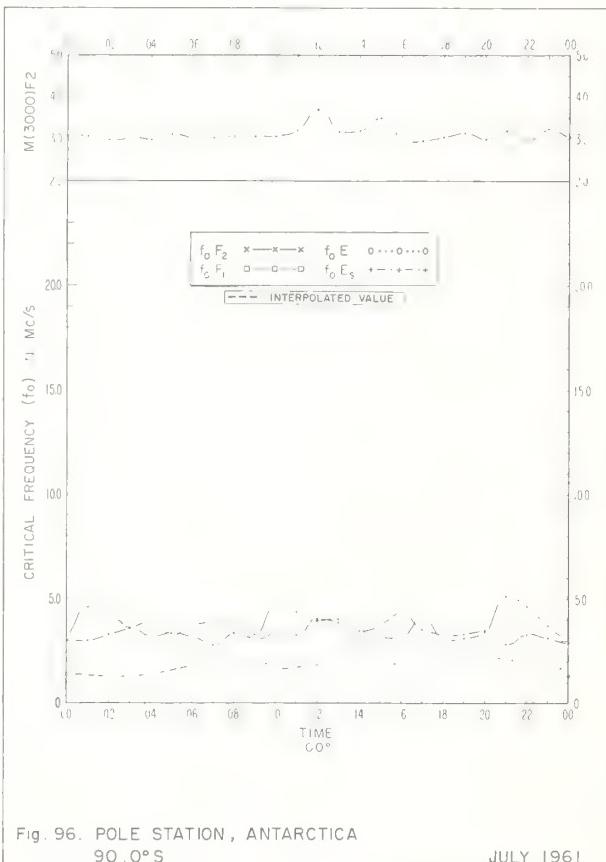
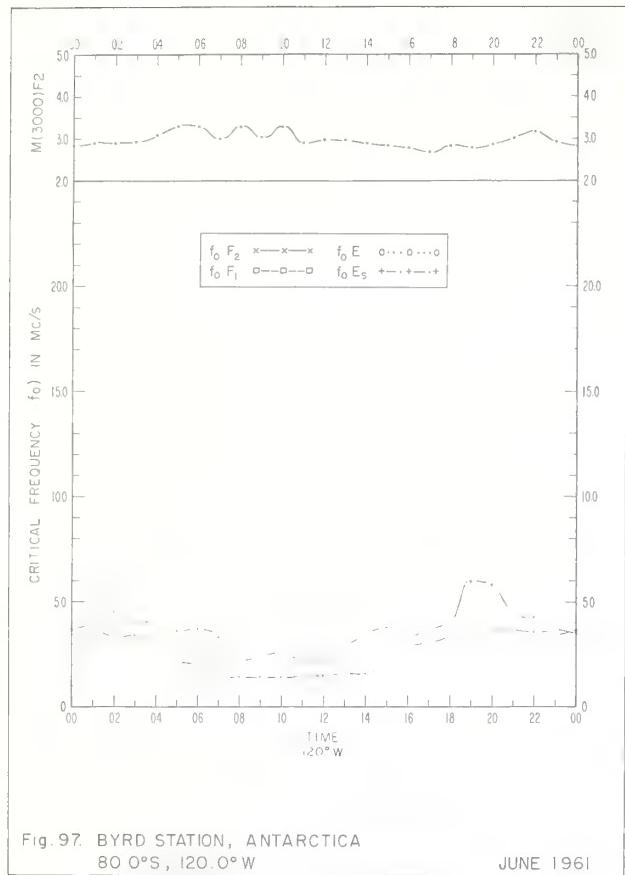
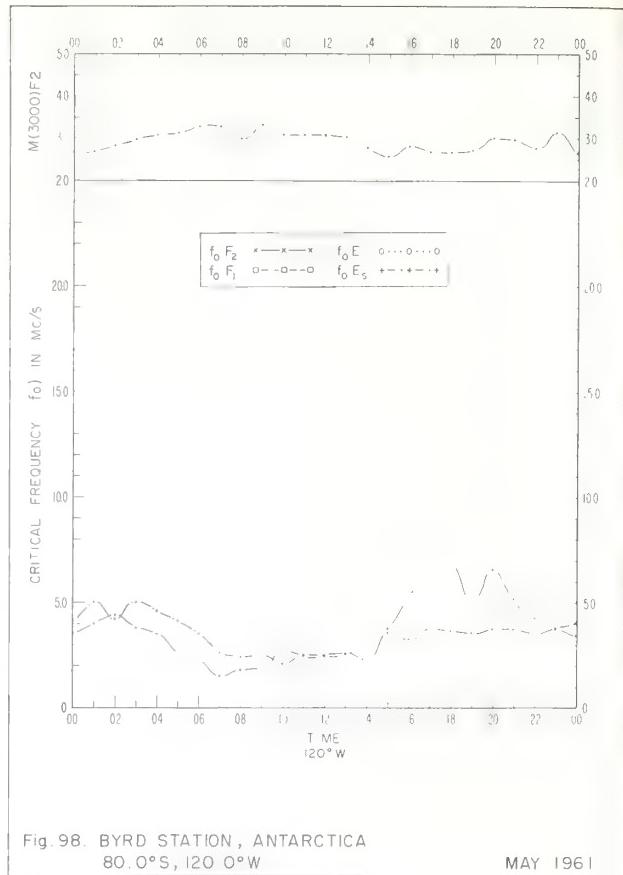


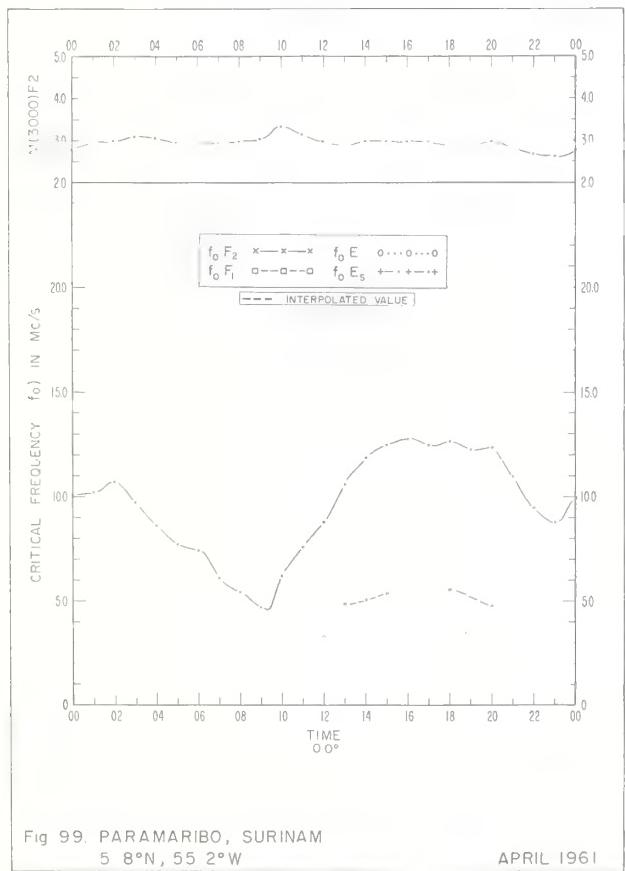
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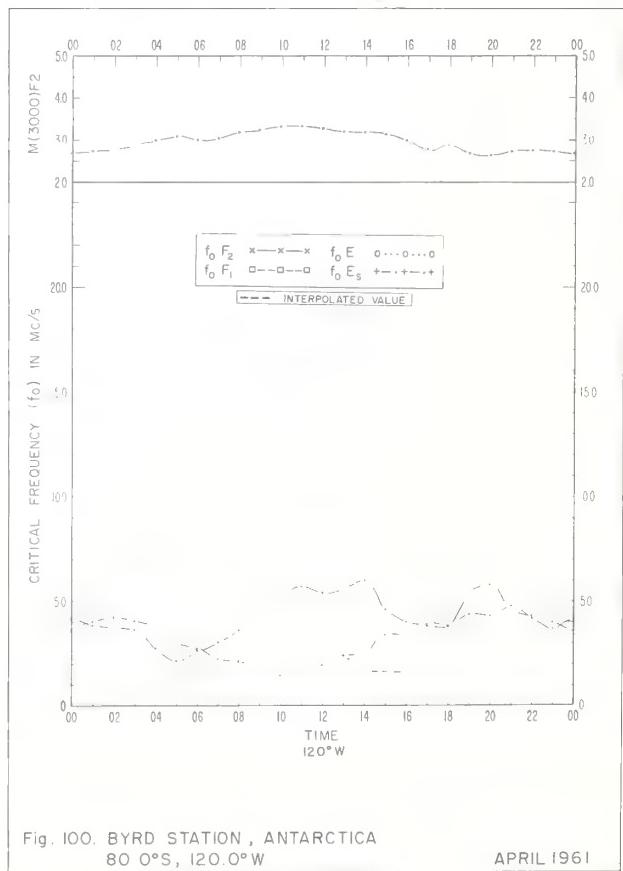
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Fig. 98. BYRD STATION, ANTARCTICA
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MAY 1961

Fig. 99. PARAMARIBO, SURINAM
5°8'N, 55°2'W

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Fig. 100. BYRD STATION, ANTARCTICA
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A catalog of records and data on file at the U.S. IGY World Data Center A for Airglow and Ionosphere, Boulder Laboratories, National Bureau of Standards, Boulder, Colorado, which includes a fee schedule to cover the cost of supplying copies, is available upon request.

CRPL-F (Part A), "Ionospheric Data."

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These monthly bulletins have limited distribution and are sent, in general, only to those individuals and scientific organizations that collaborate in the exchange of ionospheric, solar, geomagnetic, or other radio propagation data of interest to the CRPL. Others may purchase copies of the same data from the U.S. IGY World Data Center A for Airglow and Ionosphere, National Bureau of Standards, Boulder, Colorado.

"Ionospheric Predictions."

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